TEXTILE WORLD

A McGraw-Hill Publication ---------- SEPTEMBER · 1946

TECHNOLOGY DEPT.

22nd ANNUAL SYNTHETICS NUMBER

A Complete Financial Service

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
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TWO PARK AVENUE, NEW YORK

EUGENE G. LYNCH, 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

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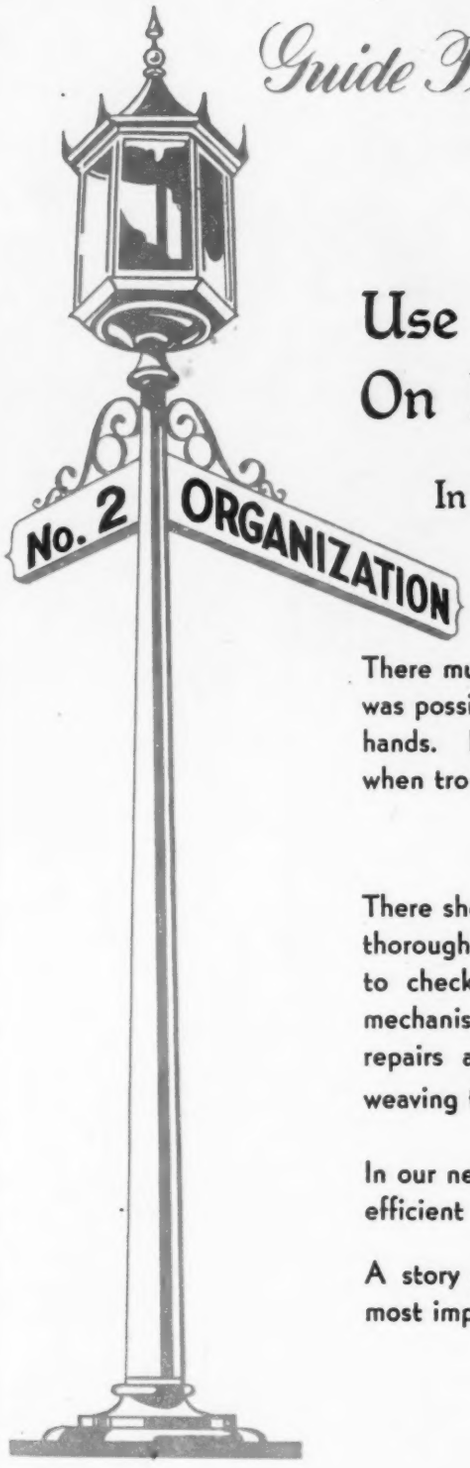
Guide Posts to Increased Production



Use Specialists On Important Jobs

In these days of
Highly Efficient Automatic Looms
And 2 or 3 Shifts of Help

There must be a better and more intimate supervision of help than was possible under the rule of an overseer and one or two second hands. It is not enough for the overseer to get into the picture when trouble develops. It is a First Essential today to

Prevent Trouble Before It Starts

There should be a Supervisor of Loomfixing who knows his job thoroughly and is able to instruct his help. He should have time to check looms and watch the work to make sure that each mechanism on every loom is correctly set. He should know that repairs are properly made and with the least possible loss of weaving time. THIS IS A ONE MAN JOB.

In our next ad in this series we will go into more details of how efficient mills are now organizing their loomfixing.

A story on organization and supervision of oilers and greases—most important with high speed looms—will follow.

These are days of organization and specialization. You need them in your weave rooms.

Second in a Series

Of What Well-Managed Mills Are Doing to Get the Best Results in Weaving

DRAPER CORPORATION
HOPEDALE MASSACHUSETTS

Mathieson
SODIUM CHLORITE
Mathieson
LIQUID CHLORINE
Mathies
BICARBONATE
ieson
ONIC GAS
Mathieson
SODA ASH
Mathieson
DRY ICE
Mathieson
CHLORINE DIOXIDE
Mathieson
AMMONIA
Mathies
CHROMOTEX
ieson
LO-BAX
Mathieson
SANITATION HTH
athies
PH-PLUS
ieson
MAFOS
Mathies
HTH BLEAC
Mathieson
SODIUM METHYLATE
thies
PURITE
ieson
HTH-15
Mathieso
CAUSTIC SODA
it's that kind
of a name
It's one thing to make a name. What counts more is living up to that name over and over again — year after year — so that eventually people say "That's a name you can count on."
Mathieson is that kind of a name. For over 50 years, in peace and war, in good times and bad, Mathieson has been well known for producing and delivering the highest quality chemicals according to the best traditions of American business.
Each Mathieson chemical is outstanding in its own field. Each carries an important guarantee on its label — the guarantee inherent in the name of its maker. We repeat, Mathieson is that kind of a name.
THE MATHIESON ALKALI WORKS (INC.)
60 East 42nd Street, New York 17, N. Y.
Caustic Soda • Soda Ash • Bicarbonate of Soda
Liquid Chlorine • Chlorine Dioxide • Ammonia,
Anhydrous & Aqua • HTH Products • Fused
Alkali Products • Synthetic Salt Cake • Dry Ice
Carbonic Gas • Sodium Chlorite Products
Sodium Methylate

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TEXTILE WORLD

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THE *Long-Range* VIEW

DESIRABLE PLACE TO WORK

One of the effects of higher wages being paid in the textile industry is the attraction of a better type of personnel into textile plants. Higher wages have done much to overcome the old stigma attached to working in "factories"; but it is a fallacy to think that higher wages will compensate for unnecessarily undesirable working conditions, especially today when employees have great freedom in choosing where they will work.

The improved working conditions in many plants are encouraging. These conditions are in part a cause for and in part the effect of the higher grade of employees found in textile mills. Help will not only be harder to hold but also will be of a less desirable type in a mill which does not provide such things as sanitary toilets, good drinking fountains, adequate facilities for washing, provisions for storing personal effects, clean and uncluttered floors, good lighting, proper temperatures for working, and refreshment facilities. Do not infer that workers will not cheerfully put up with high temperatures, coldness, or dampness—they will if such conditions are unavoidable. Biggest objections are to unnecessary discomforts and unpleasantness.

How can one mill justify dark, wet, dirty toilets when nearby is a mill with handsome tiled rest rooms that are well lighted and clean? Many mill men say they can judge a mill by the condition of its toilets, and in a great many instances they can.

Bonuses, vacations with pay, retirement plans, recreation facilities, and insurance policies are all fine supplements to good pay; but their effect can be nullified on the job by such things as unguarded belts and gears, poor equipment to work with, unnecessary eye strain, grimy floors and walls, puddles of water to be waded through, oil to be slipped on, and the prevalence of vermin.

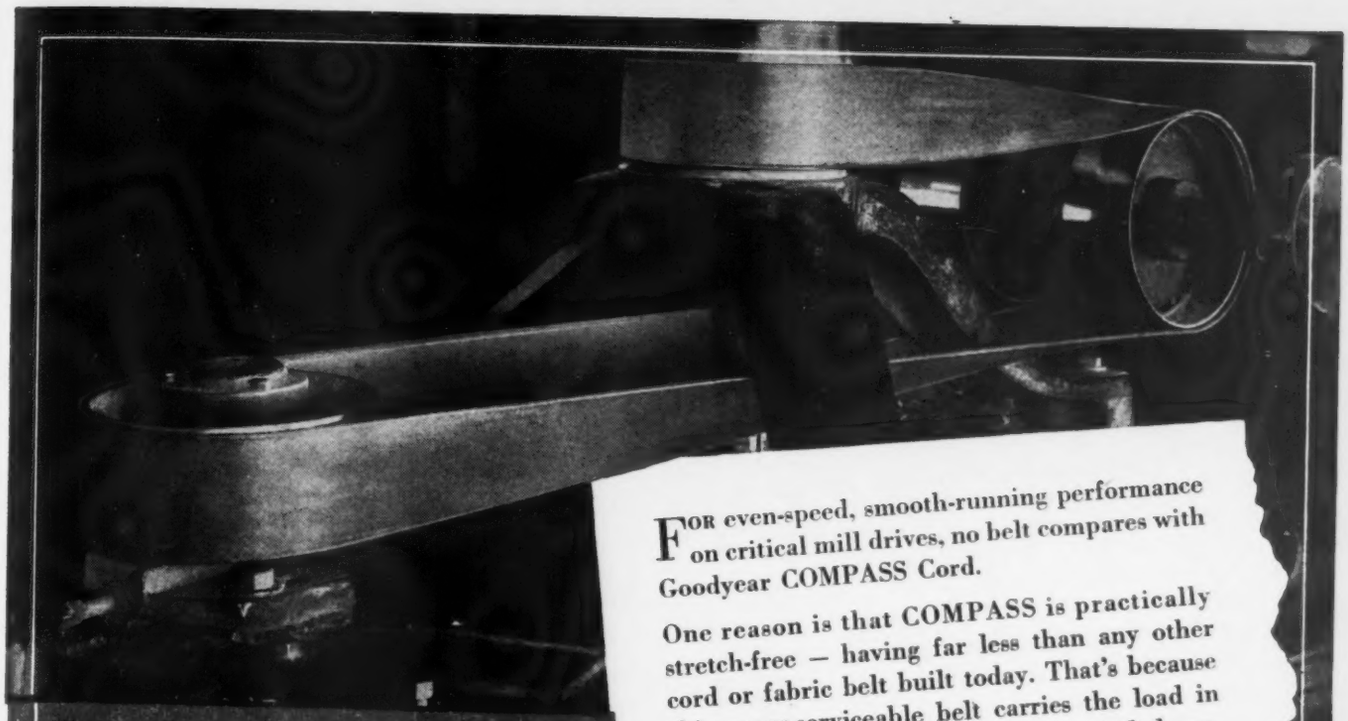
Mention should be made of noise, vibration, high humidity, and flying lint. Those items are, to a large degree at least, expected and tolerated as necessary in manufacturing most textiles, if their intensity is not unnecessarily high. Employees know—often better than management—to what degree undesirable conditions affecting them are really necessary. Many employees have worked in plants where lighting was better or where more satisfactory lunch facilities were provided. Some know that on a former job where conveyors were provided they were able to produce more with less hard physical effort. Unless there are other compensating factors on their present jobs, these employees naturally will tend to seek work at plants where conditions are better.

For a time the newer plants, notably those set up for running rayon and those for fine-gauge full-fashioned hosiery, led the way in providing the more pleasant conditions in which to work. For one thing, such plants had a natural advantage in absence of flying lint; and, as a whole, they had more money to spend. Eventually, it was discovered that staple-using mills need not be eyesores and finishing plants need not be messes. Today some cotton mills and finishing plants are among the cleanest in the textile industry.

Mills now have more money with which to install improvements for employee welfare, and the current high cost and scarcity of labor make many expenditures now justifiable. For example, a department that had its lighting improved not only had less labor turnover on the night shift but also increased production over 10%. A Southern mill lowered its rate of absenteeism during summer months after it installed an air-conditioning system. Another mill that could not keep anyone on a back-straining beam-handling job didn't need anyone after putting up an automatic electrified tramrail.

Making a plant a desirable place in which to work pays off in less labor turnover, fewer accidents, higher production, and in many less tangible ways. It's good business to have good working conditions. Mills which are not desirable ones in which to work will have to curtail, if not shut down. They invite trouble.

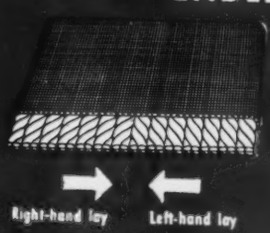
C. H. Bendigo



It THRIVES on tough DRIVES!

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

(GTM)-Specified COMPASS CORD ENDLESS BELT



For Heavy-Duty Mill Drives

Note that the load-carrying cords on one side of the belt are right-hand twist — on the other side, left-hand twist. This patented Compass construction insures a balanced, true-running belt that will not "travel" on the pulleys.

FOR even-speed, smooth-running performance on critical mill drives, no belt compares with Goodyear COMPASS Cord.

One reason is that COMPASS is practically stretch-free — having far less than any other cord or fabric belt built today. That's because this super-serviceable belt carries the load in a layer of heavy-duty rope cords, spiraled continuously without a splice.

This unique, endless construction affords much greater strength and stamina. Result: COMPASS Belts are 25% thinner than other belts of the same power rating — assuring far longer flex life.

So on slubbers, spoolers, vertical openers, wherever belts find tough going, you can depend on COMPASS to do the job with unbeatable efficiency. The fact is, COMPASS will often deliver from two to more than four times the service of conventional belts — and the experience of countless mills proves it.

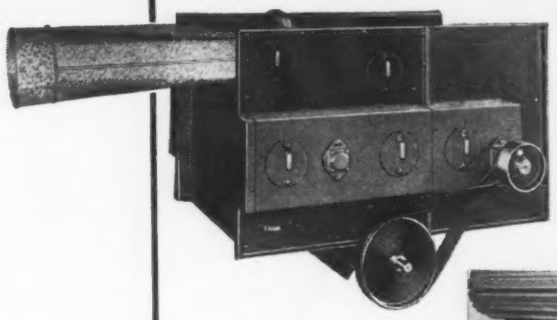
If you'd like that kind of belt performance on your hard drives, why not get the full story on COMPASS? Just consult the G.T.M. — Goodyear Technical Man — or write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

FOR HOSE, BELTING, MOLDED GOODS, PACKING — built to the world's highest quality standard, phone your nearest Goodyear Industrial Rubber Products Distributor.

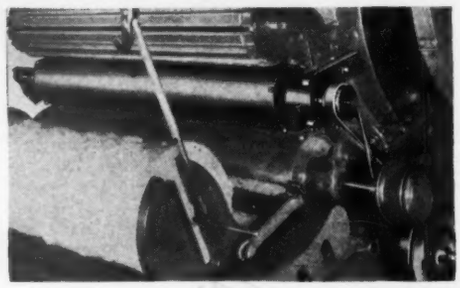
Compass—T.M. The Goodyear T. & R. Co.

GOODYEAR

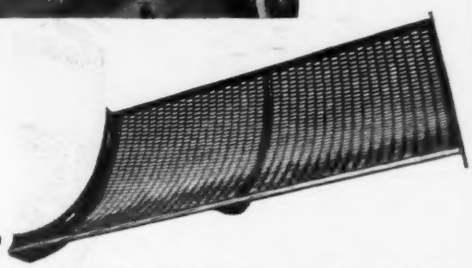
THE GREATEST NAME IN RUBBER



#11 Dust and Waste Extractor

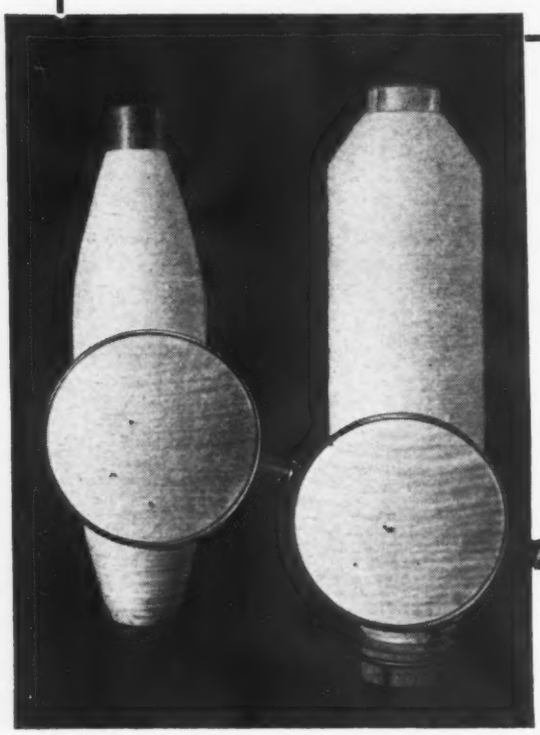


Continuous Stripper



Waste Control Screen

3 Cleaning Units *that reduce neps, specks, and other impurities . . . and prevent them from spoiling good yarn and cloth . . . and do it without added cost*



Although it is something to be hoped for, the complete elimination of all neps and other impurities in the processing of quality yarn, is not possible at present. But great progress is being made and three distinct pieces of Saco-Lowell equipment are available which reduce these foreign particles to a very minimum and substantially improve the production of quality yarn and fine cloth.

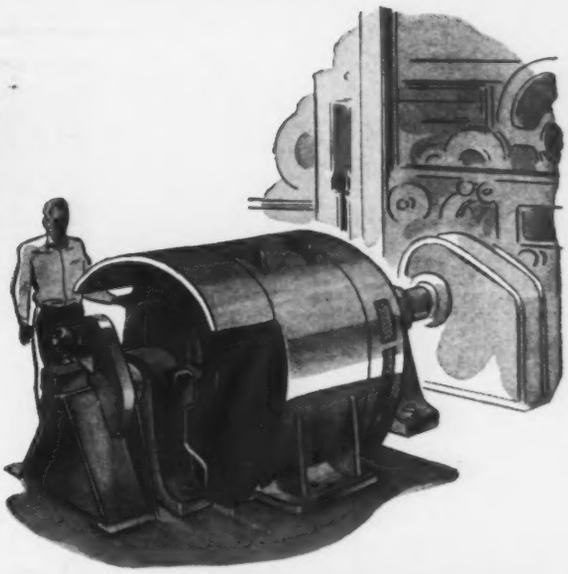
The Saco-Lowell #11 Dust and Waste Extractor *is the first point of attack against these minute particles. Here the great bulk of fine peppery leaf and dirt is removed.* **The next point of attack is at the card.** *Here, by using a "combat team" composed of the Continuous Stripper and the Waste Control Screen, it is possible to keep the cylinder wire in such an active condition that there is a definite reduction in the amount of nep, leaf and other impurities in the web.*

An effective means of estimating the amount of impurities that are now "getting by" is to make a nep and leaf count on ten square inches of cloth. Should you find this count too high, our engineers may be able to make some helpful recommendations.

SACO-LOWELL SHOPS BOSTON, MASSACHUSETTS

Charlotte *Greenville* *Atlanta*

"What! Stop a 30" Calender Roll in Less than 14" of Roll Travel!"



"**Right!** And besides that emergency stop, give us 10 to 1 speed range on the motor and hold speed *close*. The torque characteristic of our calender requires that the motor have high overload capacity at low speeds without overheating. And because of operating conditions, we want sparkless commutation too!"

B-b-u-t-t... "No buts" said Mr. Rubber Mill Man, "that's *exactly* what we need. You see, we're experimenting with new materials on our rolls, and since we can't *pre*-determine best roll speeds for them, we must have a drive that'll give us complete *range* of speeds, and at the same time, complete *protection* for our workers".

"**In A Nutshell,** you and the control engineers must design a calender drive system that'll give us *higher* and *lower* calender speeds, *closer* speed regulation and *sudden* emergency stopping —"*all three!*" Well, we set up meetings between the control and motor designers to plan a *coordinated* design that would meet the needs.

An Automatic Speed Control incorporating both our m-g set and "Regulex" exciter was designed to hold selected speed within close limits. And, after a careful analysis of required load characteristics, we designed a 400 hp d-c motor of low inertia for quick stopping . . . and which also provided speed range from 25 to 250 rpm.

Remember That 14" Stop? After the system went in, we stopped the rolls first at 18" . . . easy. Then at 14" . . . at 12" . . . at 9"! And we probably would have stopped 'em even shorter but for possible danger of too sudden stops to the calender gear system. And commutation? After 6 months, the operators say it's perfect. A 2048

Moral: Every time Allis-Chalmers discovers new ways of solving *special* motor problems, like this one, it also learns how to build better *standard* motors for you! Watch for these new and better motors from A-C. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

Wait 'til you see the NEW

ALLIS-CHALMERS MOTORS!

FLINTKOTE PRODUCTS
Aqueous Dispersions of
Synthetic Latex Compounds • Protective
Coatings • Waterproofing and Dampproofing
Materials • Paper Sizing and Laminants
Rug Backings, Binders and Cements •
Industrial Asphalt Emulsions and
Adhesives

Common Denominator for Industry...

Protection . . . whether for structures or equipment, products or personnel . . . is a problem common to all industry.

We, at Flintkote, manufacture protection.

Flintkote Hydralt* Protective Coatings (which outlast any other form of bituminous coating exposed to weather) guard against moisture and corrosion.

Flintkote Insulation Coatings give needed resistance to acid vapor and abrasion. Flintkote Flooring Emulsions are the key to long-wearing, heavy-duty mastic floors. Flintkote Tire Cord Solutioning imparts additional wear and heat resistance to motor vehicle tires.

Flintdek† plastic anti-slip coating for floors and steps reduces hazards. Flintkote adhesives, sealants, saturants and coatings are many and varied for specialized processing and protection. Syntex* aqueous dispersions of rubbers, resins and synthetic latices add versatility to elastomers as well as freedom from fire hazards.

Write us about your processing or protection problems. Let us put our extensive research, development and production facilities to work for you.

*Reg. U. S. Pat. Off. †Trade-mark

Flintkote-Products for Industry

THE FLINTKOTE COMPANY · INDUSTRIAL PRODUCTS DIVISION

Atlanta · Boston · Chicago Heights · Detroit · Houston

FLINTKOTE INDUSTRIAL PRODUCTS

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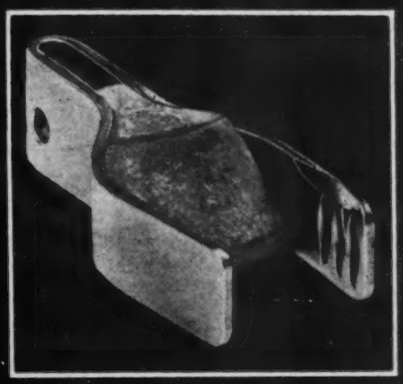
Shuttle Spring Rubbers

For Draper Shuttles

Are Back Again



They are ready once more to
carry on their pre-war job of

Reducing Shuttle Spring Breakage
Absorbing Shock at the Transfer
Keeping the Bobbin Pointing True

The cost of these rubbers is six cents each. For the present they will be furnished in New Shuttles only when specified. Their use reduces your annual cost of shuttles and shuttle parts.

These Spring Rubbers are not a "Post-War" product. They are a Pre-War product that has come back to give you the Service you have Missed since they Became a War Casualty.

DRAPER CORPORATION

Hopedale Massachusetts

"...with Resloom....., felting and consequent high shrinkage normally experienced with wool will not take place"*

Laundry Age, January, 1946

Mr. Arthur I. Anderson, who conducted Resloom tests, examines a wool shirt after laundering. Mr. Anderson heads the New England Testing Laboratory, Somerville, Mass.; was formerly head of the American Institute of Laundering's Department of Washroom Research and Textiles.

This statement by Arthur I. Anderson in "Laundry Age" confirms again what Monsanto textile chemists have been saying about that extraordinary melamine finish, Resloom: TRULY LAUNDERABLE WOOLENS ARE NOW POSSIBLE.

What this means to laundries is, of course, only a fraction of what it means in satisfaction and service to consumers, *and what it means, particularly, to the wool industry in new opportunities.*

Experience in mill, in finishing plant, in laundry and in actual service, shows that Resloom can give definitely ascertainable, definitely marketable values: (1) shrinkage control, (2) stability, and (3) quality, to practically all woolens and worsteds...in suitings, shirtings, blankets, wool hose, accessories, etc.

How Does Resloom Do It?

The "secret" of Resloom's success in this long-sought-for achievement is simple. When fibers of woven fabrics are passed through a water bath containing a small concentration of Resloom, the water opens up the tiny interstices of the individual fibers, permitting the injection of the resin-forming chemicals into the heart of the fiber. In the subsequent curing, at around 300° F., the resin is formed *inside* the fibers, giving the textile its stability without making it boardy in hand. No amount of water, washing or dry cleaning will separate resin from fiber once the Resloom is cured.

For complete technical data, Resloom samples, or arrangements for a demonstration in your operations, address: MONSANTO CHEMICAL COMPANY, Everett Station, Boston 49, Mass.

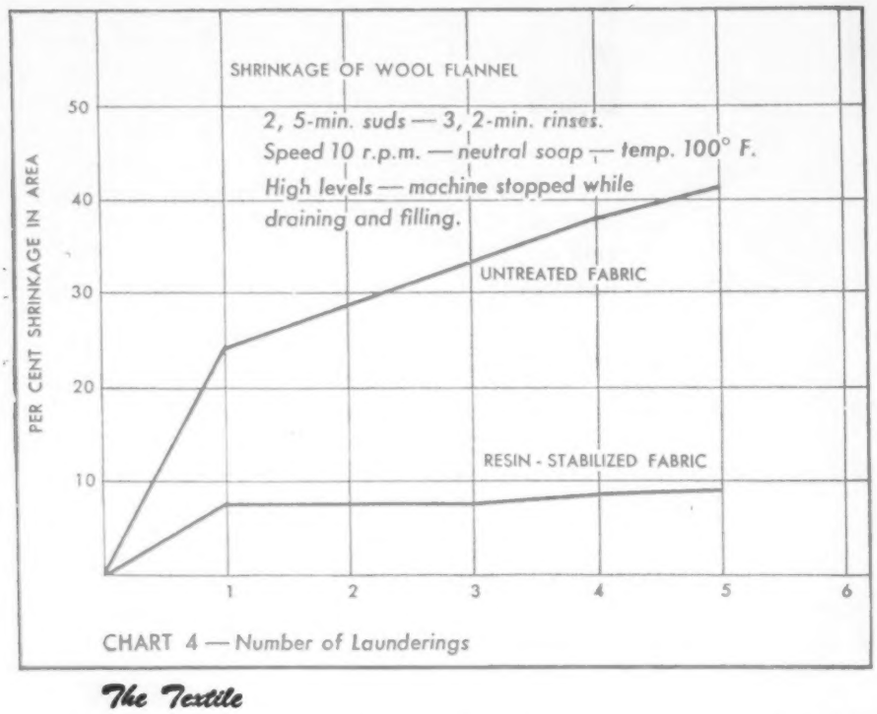


CHART 4 — Number of Launderings

*Full text of quotation:

"Numerous laundering tests conducted with wool fabrics resin-stabilized with Resloom reveal that even at high machine speeds and/or in high-temperature washing, felting and consequent high shrinkage normally experienced with wool will not take place. In fact, such fabrics when commercially available could be washed without use of numerous precautions now necessary. In addition to special equipment that would not be needed, it is apparent that more wool apparel would fall into the classification of 'launderable'."

Resloom: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING INDUSTRY ... WHICH SERVES MANKIND

New departures by New Departure for Textile Machines

Good examples of New Departure's creative engineering in serving the special needs of the textile industry—are these special types of ball bearings.

They include self-sealed ball bearings in which lubricant may be revitalized when required by injection through felt seals with a pressure oiler and a "hypodermic" needle.

Treadle roll ball bearings for Draper looms, which are sealed and lubricated for life, avoid the danger of "flash" and fires resulting therefrom.

Vertical tension pulley ball bearings which are not only self-sealed, but which provide their own oil-circulating system.

Horizontal tape tension pulleys which are thoroughly self-sealed, and have in addition a built-in oil reservoir, an oil filter, and lubricating wick.

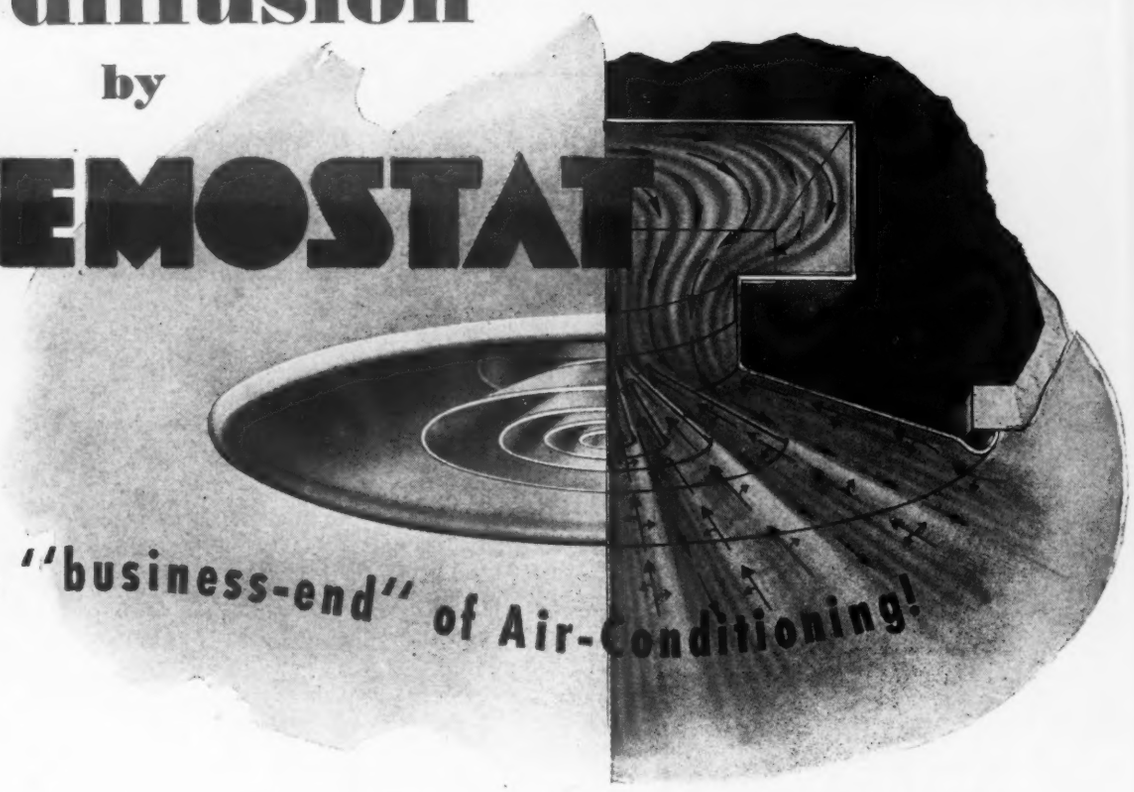
Machine designers are invited to bring their bearing problems to the same engineers whose experience and imagination have produced these new departures by New Departure.

NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN. • Branches in WASHINGTON • BOSTON • PHILADELPHIA and other cities

air-diffusion by ANEMOSTAT



. . . the "business-end" of Air-Conditioning!

"NO AIR-CONDITIONING OR VENTILATING SYSTEM IS BETTER THAN ITS AIR-DISTRIBUTION"

The Textile Industry takes pride in product quality and production speed . . . and realizes the necessity for *close equalization* of temperature and relative humidity during manufacturing and processing operations. Anemostat air-diffusion has definitely proved its value as an important contribution to the Textile Industry.

The patented ANEMOSTAT is an air-diffusing device without moving parts. It can be installed on any air-conditioning, ventilating or hot-air heating system. It assures *draftless* distribution of any volume of cooled or heated air — at any duct velocity.

Because the ANEMOSTAT can equalize temperature to within plus or minus 1° F. — and thereby equalize relative humidity throughout any room — this air-diffuser is the choice of leading textile manufacturers throughout the country.

This is how the ANEMOSTAT *completes* air-conditioning:

Due to its scientific design, the ANEMOSTAT distributes air of any duct velocity in a multiplicity of planes travelling in all directions. Simultaneously, the unit creates a series of counter-currents which siphon into the device, room-air equal to about 35% of the volume of supply-air. This room-air is mixed with the supply-air *within* the diffuser — before the air-mixture is discharged into the room. The velocity of the discharged air is instantly reduced within the ANEMOSTAT by air expansion. The result: humidity and temperature are closely equalized . . . air stratification is eliminated . . . there are NO DRAFTS!

An ANEMOSTAT engineer is ready to help solve your problems of equalizing humidity and temperature — backed by 25 years of specialized experience in scientific air-distribution. There is no obligation!

●

Write today for full details.

AC-1095

ANEMOSTAT

REG. U.S. PAT. OFF.

ANEMOSTAT CORPORATION OF AMERICA
10 East 39th Street, New York 16, N. Y.
REPRESENTATIVES IN PRINCIPAL CITIES

WHEN A DIFFERENCE IN

Speed

MAKES A DIFFERENCE IN

Profit

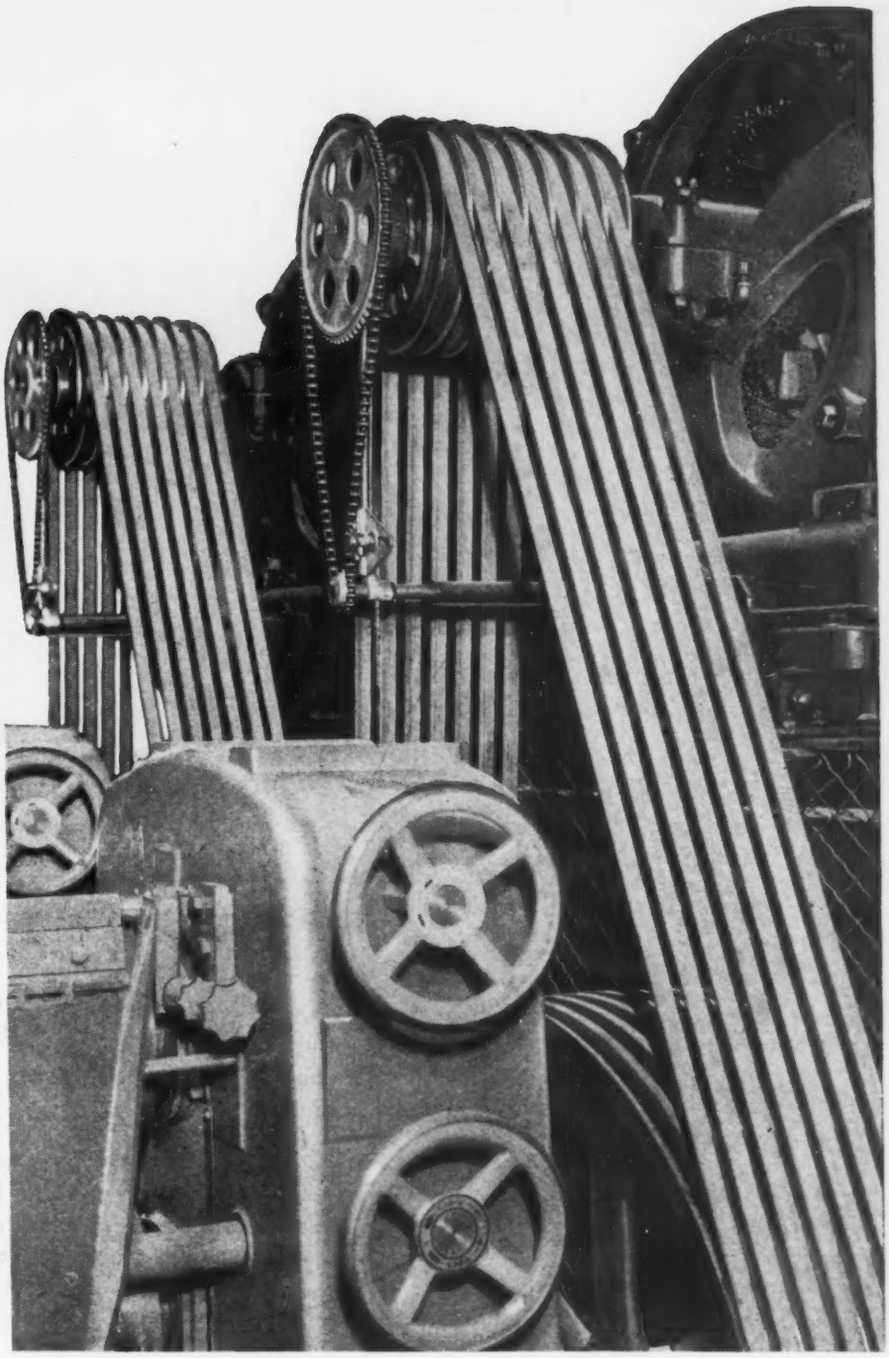
—When you can get greater efficiency, economy or output from a machine through flexible, accurate control of its operating speed — use a TEXROPE VARIABLE SPEED DRIVE! No special motor or costly reduction gears to install. In many cases, the only change required is to replace the regular drive sheave with a TEXROPE Vari-Pitch Sheave.

TEXROPE Variable Speed Drives

Here's a wide range of equipment to meet every need: TEXROPE Vari-Pitch sheaves for stationary or motion control — TEXROPE Wide-Range Vari-Pitch Sheaves and V-Belts — Speed Changer units. Speed variations up to 375% are possible. Ask your nearest Allis-Chalmers office or dealer for bulletin No. B6082-A.

V-Belt Drive Headquarters

Your A-C dealer has a full line of V-Belt Drive equipment—TEXROPE Super-7 V-Belts, sheaves and Variable Speed Drives. Get all your needs from one reliable source . . . from the originators of industry's Multiple V-Belt Drive. ALLIS-CHALMERS, MILWAUKEE 1, WIS.



(ABOVE) TEXROPE Vari-Pitch sheaves for motion control. They give smooth speed variations up to 25% on these roller mills used in the manufacture of soap chips. Changes in speed are made without stopping the machines.

"MAGIC-GRIP" Sheave for fast changes

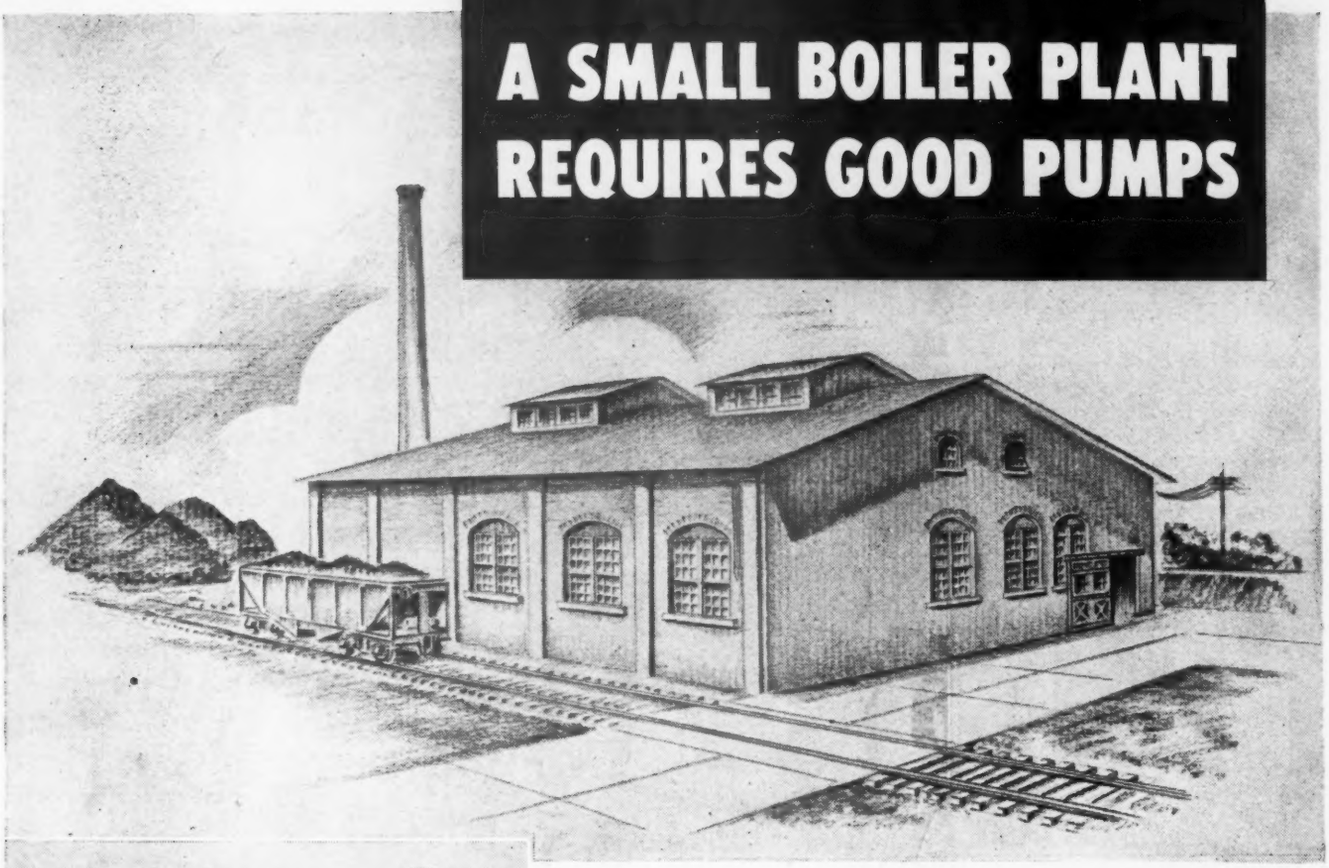
Here is the standard heavy-duty sheave for fast, easy mounting and demounting. *Sheave comes completely assembled.* Simply slip it on the shaft, move it to exact alignment, and tighten three cap screws. It's locked on the shaft with the grip of a vise — yet can be removed just as easily. No hammering, filing or reaming. No set screws to damage shaft. A2103

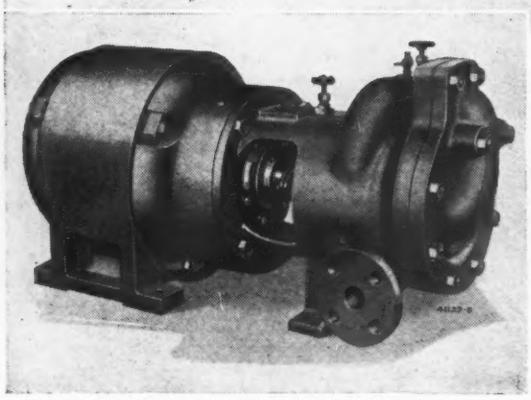
ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

TEXROPE V-BELT DRIVES

A SMALL BOILER PLANT REQUIRES GOOD PUMPS





MRV 2-Stage Motorpump

Low operating costs and a minimum of maintenance are as important for the feed pump in a small boiler plant as in a large one. That's why Ingersoll-Rand centrifugal boiler-feed pumps for small plants are built with the same care as the well-known I-R units for large, high-pressure stations.

There is an efficient, dependable pump in the line for your plant... Two-stage pumps, four stage pumps, (yes, even 30 stages if you need that many). There are pumps that will deliver as little as 5 gal. per min., others for any capacity you may require.

Careful selection of materials, balanced impellers, rigid pump shafts, deep stuffing boxes, and other big-pump features, assure long life and freedom from trouble.

Ask the Ingersoll-Rand engineer near you for literature on a pump to fit your plant. Some of those that might fit your needs are:

MRV: 2-stage Motorpump, pressures up to 200 lbs, capacities to 275 gal per min.

MRVH: 4-stage Motorpump, pressures to 260 lbs, capacities to 50 gal per min.

GT: 2-stages; pressures to 450 lbs, capacities to 2200 gal per min.

CNT: 4 to 8 stages; pressures to 800 lbs, capacities to 700 gal per min.

All sizes can be furnished with motor or turbine drive

SEVENTY-FIFTH ANNIVERSARY

COMPRESSORS • AIR TOOLS • ROCK DRILLS
TURBO BLOWERS • CONDENSERS
CENTRIFUGAL PUMPS • OIL AND GAS ENGINES

Ingersoll-Rand

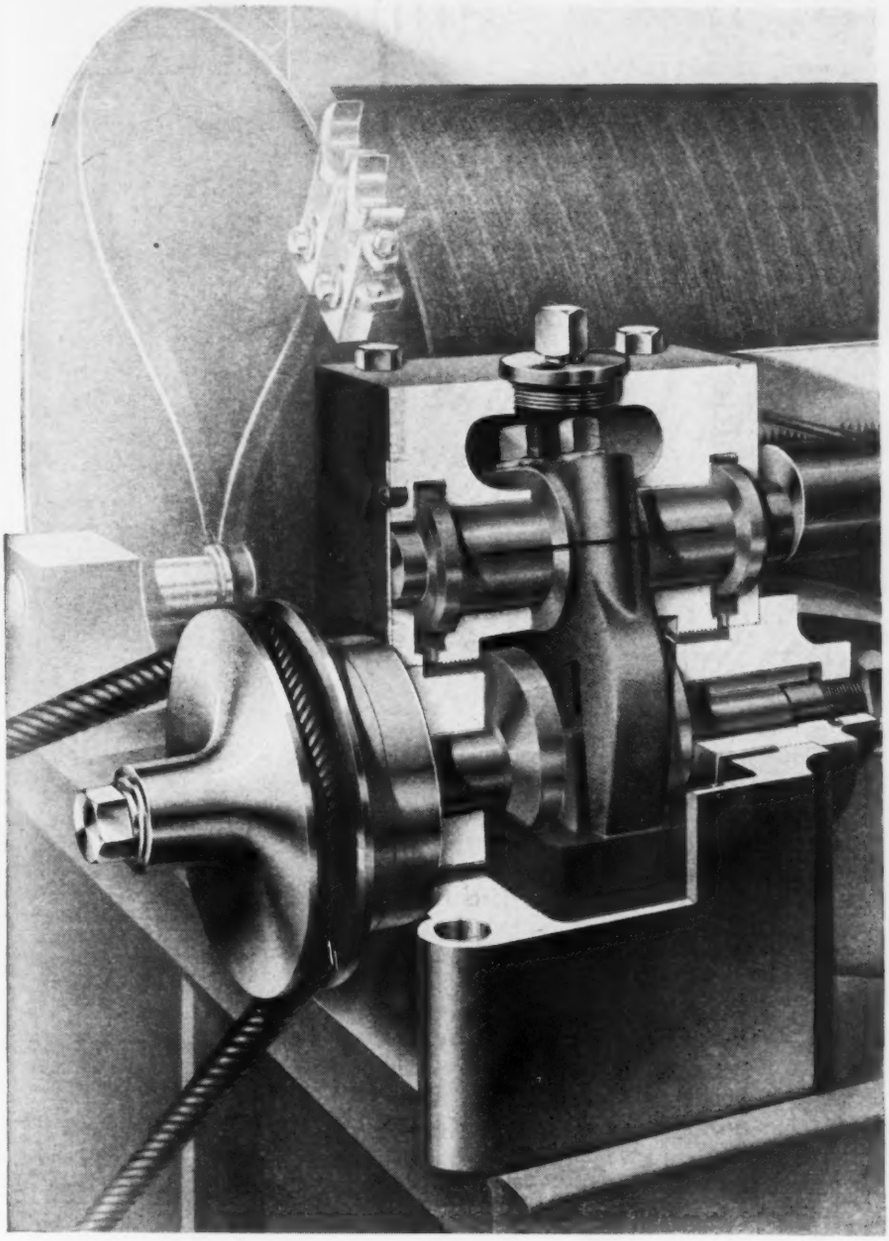
CAMERON PUMP DIVISION

11 BROADWAY, NEW YORK 4, N. Y.

10-903

Beat Wear to the Punch

in your Comb Boxes!



➡ Imagine hundreds of hammer blows a minute constantly battering at films of oil only a few thousandths of an inch thick, and you get an idea of conditions inside your comb boxes.

Service like this is particularly tough on oil. Unless the oil has unusual shock-resisting qualities and sticks tightly to the metal surfaces, the continuous pounding breaks through the lubricating film. This means metal-to-metal contact, friction, heat and wear.

Gargoyle Vactra Oil has been specially made for this kind of work. It has a strong attraction for metal, forms persistent, clinging films that resist rupture and maintain protective lubrication at all times. Further, it retains its original characteristics over long periods—does not thicken with use, or form deposits that may clog small oil passages.

* * *

Use Gargoyle Vactra Oil in your comb boxes for continuous trouble-free operation...maximum protection against wear!

Get this Complete Lubrication Program for all your machines

- Lubrication Study of Your Entire Plant
- Recommendations to Improve Lubrication
- Lubrication Schedules and Controls
- Skilled Engineering Counsel
- Progress Reports of Benefits Obtained

GARGOYLE Lubricants

Socony-Vacuum Oil Company, Inc.

and Affiliates: Magnolia Petroleum Co., General Petroleum Corp.

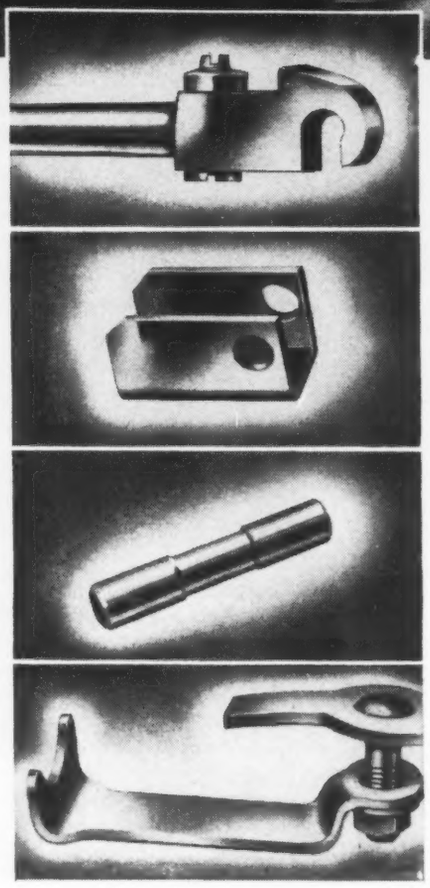
TUNE IN THE MOBILGAS PROGRAM — MONDAY EVENINGS, 9:30 E.D.T. — NBC

Announcing . . .

THE IMPROVED

PATERSON TENSION SHUTTLE

for Shuttle-changing or Box Looms



New!

LEVELING DEVICE

Spindle head, completely redesigned and constructed, permits accurate alignment by turning leveling screw with slot provided in shank. Lock nut maintains setting. Eliminates any need for bending spindle by hand with possibility of breakage or damage to top spring. Slot head design makes spindle change easy.

New!

METAL HEAD BOX

Heavy steel box holds spindle head rigidly in place, prevents side play. Provides solid base for leveling screw. No part of spindle head contacts wood. Assures lasting, positive alignment.

New!

SPINDLE HEAD PIN

Double shouldered steel pin, shaped so it can't work out through front or back wall of shuttle. Avoids danger of reed spoilage or "smashes" from "break outs". A patented feature!

New!

INTERCHANGEABLE CATCH

Shuttle can be assembled with either long catch, to fit a wooden bobbin, or short one for paper tube. Parts interchangeable. Operation requires less than two minutes. Provides positive fit.

NOW, with four tested improvements in mechanical design, this U S Paterson Tension Shuttle will help to eliminate "smashes" and "seconds", and reduce excessive shuttle maintenance costs.

Once again, U S matches progress in loom design with progress in shuttle design, giving you proved new features that assure greater efficiency, increased production, and fabric quality protection.

Check over these time-saving, money-saving advantages. A U S representative will show you the improved Paterson Tension Shuttle at your request. See it, try it, before you place your next shuttle order!

U S BOBBIN & SHUTTLE CO.

PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO AGENT:
Albert R. Breen,
80 E. Jackson Blvd.

LAWRENCE, MASS.

CANADIAN AGENT:
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JOHNSON CITY, TENN.
CHARLOTTE, N. C.
ALABAMA AGENT:
Young & Vann Supply Co.
Birmingham

THE SEAL OF QUALITY AND SERVICE SINCE 1857
US
ESTABLISHED 1857

SANDOZ PRESENTS *The color achievement of the month*

Home Beautiful BY TULA

This stunning hostess gown of romaine crepe, gilded with imported Swiss lace, invites compliments to the girl... and to Tula for the artful design, to Shields for the fabric, and to the finisher — Cliffside Dyeing Corp. — for the clear, true color.

As with so many of the fabrics carrying the brands most familiar to shoppers everywhere — from negligees to upholstery, from socks to carpets — credit for the color can be shared by Sandoz, supplier of unimpeachable colors and chemicals.

Up-to-the-minute in its appreciation of fashion's exactitude . . . faithful to high technical standards which are continually being raised in its own laboratories... Sandoz offers the textile industry the most in color.

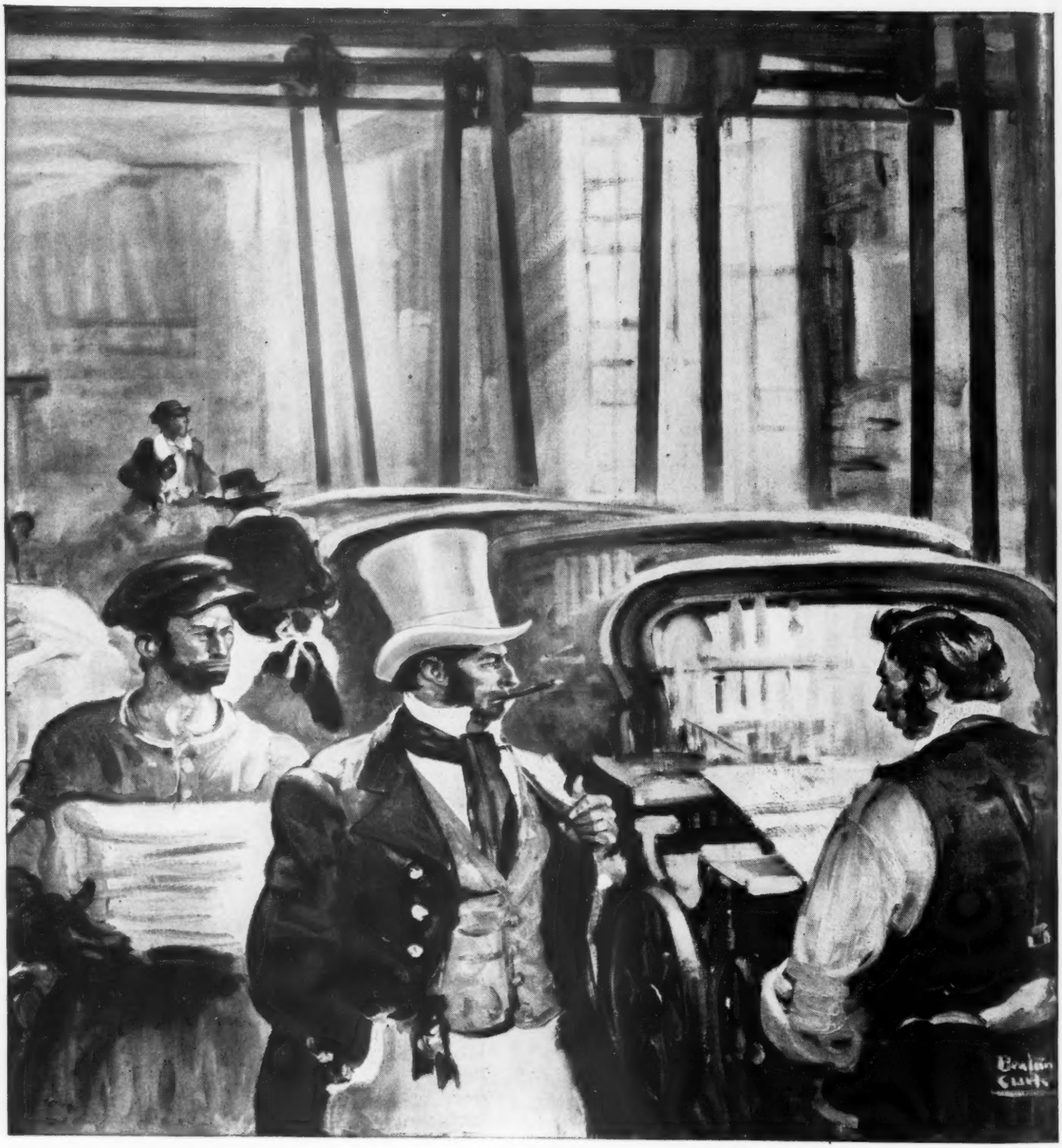
For example, Visco Milling Scarlet GFL, a brilliant new scarlet, has unusual fastness to washing, either direct or after-treated with formaldehyde and acetic acid. It is stable to urea formaldehyde finishes without effect on light fastness. And it has exceptional fastness to fulling when used on rayon waste for blending in woolen fabrics.

For acid, chrome or direct dyes . . . or auxiliary chemicals... for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements.

Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches are in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

SAND *thinks ahead with textiles* S SANDOZ



WHEN THE LOOM CAME OUT OF THE KITCHEN

Weaving, as a household industry, was brought to an end in 1814 when Francis Cabot Lowell designed the first American power loom at Waltham, Massachusetts. With his brother-in-law and a friend, Lowell opened a mill where, for the first time in history, all the processes for converting cotton fiber into cloth were performed within the walls of one building by power . . . and the mill is still in operation.

Modern looms — as well as spinning frames, and other textile machinery — are, of course, equipped with anti-friction bearings. Many of these are made by SKF. For SKF originated the self-aligning ball bearing, widely used in the textile industry, and has pioneered many developments in this important industrial field during the last 30 years.

Since SKF makes so many types of ball and roller bearings, an SKF engineer can give you expert help in selecting

THE RIGHT BEARING FOR THE RIGHT PLACE

SKF
BALL AND ROLLER BEARINGS

SKF INDUSTRIES, INC., PHILA., PA.

7003-A

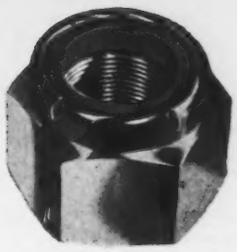
WHAMING *Picker Stick Impacts* **160 TIMES A MINUTE**

—*yet the Red Elastic Collar protects permanently against* IMPACT! VIBRATION!

The wham of the picker stick, as it keeps the shuttle flashing back and forth, sounds a double warning against fastener failure. Impact and vibration have two opportunities to back off the nuts holding the lug straps to the lug stick. *First,* vibration attacks *new* connections where the nuts are *fully seated* against the constantly stretching and contracting lug straps. *Second,* vibration attacks *old* connections where the nuts have been left *unseated* by stretched lug straps. Here again, textile mills find that the self-locking Red Elastic Collar in Elastic Stop Nuts provides permanent protection against fastener failure caused by Vibration. Down time is reduced. Pickage and weaveroom efficiency are increased.

ESNA Elastic Stop Nuts also protect permanently against Corrosion, Liquid Seepage, Thread Damage and Costly Maintenance. Order Elastic Stop Nuts for maintenance. Specify them on new looms. Or let ESNA study your specific fastener problems. Address: Elastic Stop Nut Corporation of America, Union, New Jersey. Agents and distributors are located in principal cities.

ESNA
TRADE MARK



LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY

It is threadless and permanently elastic. Every bolt — *regardless of commercial tolerances* — impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads — and eliminates all axial play between bolt and nut threads.

All ESNA Elastic Stop Nuts — *regardless of size or type* — lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ELASTIC STOP NUTS

INTERNAL WRENCHING

ANCHOR

INSTRUMENT MOUNTING

SPLINE

CLINCH

GANG CHANNEL

CAP

PRODUCTS OF: **ELASTIC STOP NUT CORPORATION OF AMERICA**

KOHORN

★ LOCATION OF KOHORN DESIGNED OR EQUIPPED PLANTS

AUSTRIA: Vienna
BELGIUM: Brussels; Tubize
BRAZIL: Sao Paulo
CHILE: Quillota, Llolleo
CZECHOSLOVAKIA: Theresienthal; Senica; Batizovce
EGYPT: Kafr el Dawar
FRANCE: Odomez; Aubenton; Moy; Argenteuil; Clairoix
GERMANY: Premnitz; Bobingen; Wolfen; Rottweil; Berlin; Cologne; Petersdorf; Pirna; Wiesbaden; Kelsterbach; Arnstadt; Glauchau; Braunlingen; Herzberg
GREAT BRITAIN: Bury; Golborne; Branston; Ashtead
GREECE: Athens
HOLLAND: Arnhem; Ede
HUNGARY: Magyarovar
ITALY: Rome
JAPAN: Ishiyama; Katada; Shizuoka; Uji; Kobe; Okazaki; Oita; Maebashi; Niigata; Yatsushiro; Osaka; Nagoya; Nishiki
PERU: Lima
POLAND: Tomaszow; Myszkow
RUMANIA: Lupeni
SPAIN: Valdenoceda
SWEDEN: Boras; Saeffle
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UNITED STATES: Marcus Hook; Parkersburg; Richmond; Buffalo; Woonsocket; Rocky Hill; New Bedford; Cleveland
USSR: Klin; Mogilew; Moscow

around the world

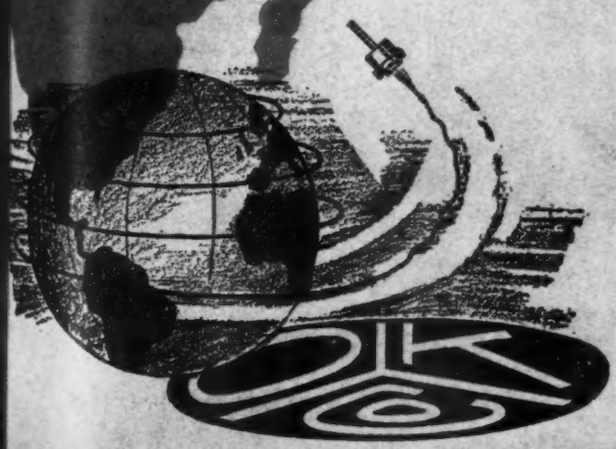
KOHORN *has equipped more than 50 rayon, staple fiber and transparent cellulose sheeting plants in 23 countries, with more under construction.*

Design, manufacture and installation of machinery and the operation of rayon plants have been our *exclusive business for more than 30 years.* No other organization in the world has had this practical experience nor has a comparable staff of expert chemists and engineers.

Since the production of rayon and staple fiber requires a very large investment per unit, errors and delays may be fatal. Plant location, climate, water, power, labor, machinery and selection of suitable process are important factors *that must be weighed carefully.* In almost every part of the world Kohorn has acquired this knowledge from actual experience. Having been the first organization to introduce rayon manufacture successfully in many countries hitherto without a rayon plant, Kohorn may justly be referred to as the "Pioneers of the Rayon Industry."

Constant research work by leading experts in our experimental station keeps us ahead of the industry and assures our clients of the latest and most efficient processes, machines and patents.

So today, Kohorn is ready to meet your requirements for the world's most modern plant — *from inception to operation — in eighteen months.* Inquiries welcomed.



OSCAR KOHORN & Co., Ltd.

Executive Offices 501 Fifth Ave., New York 17, N. Y.

He runs his road with GEON-insulated wire

"Rainbow Cable" control wire developed and manufactured by Phalo Plastics Corp., Worcester, Mass.

Another interesting application for GEON *raw materials*

THE things that Bill used to do with his hands to keep his railroad running—coupling and uncoupling cars, loading and unloading, turning switches—are all done by electricity on the modern American Flyer that huffs and puffs and belches smoke just like its full-sized counterpart.

That calls for connecting wires that are easy to identify, that stand rough usage, that won't crack, get gummy or peel, that will keep fire hazards to a minimum. That's why the A. C. Gilbert Company selected wire with insulation made from GEON. It can be brilliantly colored in a wide range, it wears indefinitely, resists aging and ozone, and is self-extinguishing—won't support combustion.

Hundreds of other products made from GEON—raincoats, handbags, luggage, upholstery, tablecloths, tank linings, fly swatters, to name a few—have these properties plus resistance to foods, acids, water, oil, heat, cold, sun, air, mildew, and many other normally destructive factors. They may be extruded, pressure or injection molded, calendered or cast into sheet or film. GEON may be applied as a coating to fabrics, fibres, and papers of all kinds. There are applications for GEON in *every* home, in *every* industry.

While we make no finished products from GEON raw materials, we will be glad to work with you on any special product problems. Just write Department H-5, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

Geon
Polyvinyl Materials
A TRADE MARK OF B. F. GOODRICH CHEMICAL COMPANY

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

Now! LIFT, MOVE, STACK Materials Electrically with NEW TRANSTACKER

PRICED AT ONLY **$1800**
(Some Models Slightly Higher)

PLATFORM TYPE TRANSTACKER
Capacity 4000 pounds
For stacking unit loads on skid platforms.

Above price applies in U. S. only

Low price brings modern material handling methods within reach of all!

NOW for the first time every business—every industry can use modern, money-saving material handling methods at new low cost.

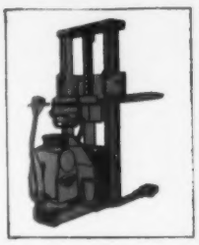
Because in the new Transtacker, Automatic's engineers have developed a high-lift stacker that sells for as low as $1800. And while it will move, lift and stack up to 4000 pounds, it weighs only 1900 pounds. This means you can safely use Transtacker, even if your floor and elevator capacities are limited.

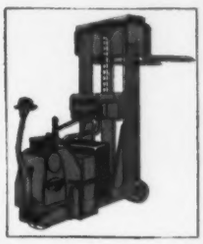
With all the advantages of the famed Transporter that moves any kind of material with amazing "touch-of-your-thumb" ease, Transtacker now gives you an electric hydraulic lift that stacks your product at new heights to increase storage capacity. With finger-tip control it lifts up to 4000 pound loads in a matter of seconds . . . smooth, controlled lowering speed for utmost safety. Mail coupon for facts.

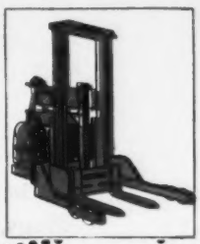
OPEN FACE PALLET TYPE TRANSTACKER—Capacity 3000 pounds—With suitable forks for stacking open face pallet loads.

SUSPENDED LOAD TYPE PALLET TRANSTACKER—Capacity 2500 pounds—With suitable forks for stacking double or open face pallets.

STRADDLE TYPE PALLET TRANSTACKER—Capacity 4000 pounds—With suitable forks for stacking double face or open face pallet loads.







PRE-TESTED IN INDUSTRY

1 Cuts loading and unloading time in half.

2 One man does the work of three with less effort—Transtacker cuts handling costs up to 60%.

3 Light in weight for limited floor and elevator load capacity.

4 Hauls any kind of product with "touch-of-thumb" ease.

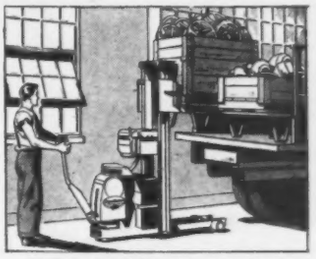
5 Gives you extra storage space without added cost.

6 Lifts and stacks product from ground level to trucks and trailers.

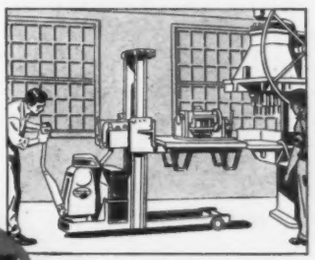
LOOK TO THE LEADER FOR ALL THAT'S NEW!

Transtacker
A PRODUCT OF AUTOMATIC
Lightens LIFE'S LOADS

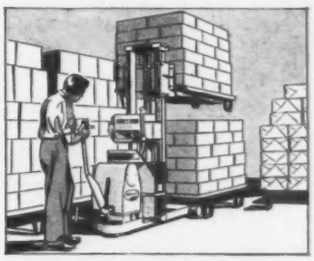
FINGER TIP CONTROLS LOAD
Cartons, crated goods, hard-to-handle material—one man or girl hauls, lifts and stacks to full storage heights.



ENORMOUS SAVINGS IN SHIPPING
Pick up merchandise from ground level and deposit it on truck or trailer. A three-man operation becomes a one-man operation.



LIFTS HEAVY MACHINE PARTS
When heavy machine parts must be lifted to working height, let Transtacker safely lift it and place it.



ENDS BACK-BREAKING HANDLING
This can be *your* trucker—easily, efficiently stacking your material with Transtacker. Extra storage space is yours free.

AUTOMATIC TRANSPORTATION COMPANY
DIV. OF THE YALE & TOWNE MFG. CO
97 West 87th St., Dept. P, Chicago 20, Illinois

Please mail me without cost or obligation, complete facts about the NEW TRANSTACKER.

( ) Have an A.T.C. Specialist call and survey my material handling costs.

Company Name.....

By.....*Position*.....

Street Address.....

City.....*State*.....

FOCUS ON THE FUTURE

THE WAY WOMEN FEEL ABOUT FABRICS is again becoming an important consideration to mills. Why not assure your fabrics of this extra, cost-free prestige? Mention the name Du Pont wherever possible in fabric identification. And urge users of your goods to do the same. No brand name in man-made fibers enjoys a more believing public. * * * * * * *
Rayon Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

My kind of smartness must have a quality look and feel. So, I'm one of the many women who feel happier about a fabric when it's labeled, "Made of Du Pont Rayon."

Cavalcade is Back on the Air . . . *Check Mondays at 8*

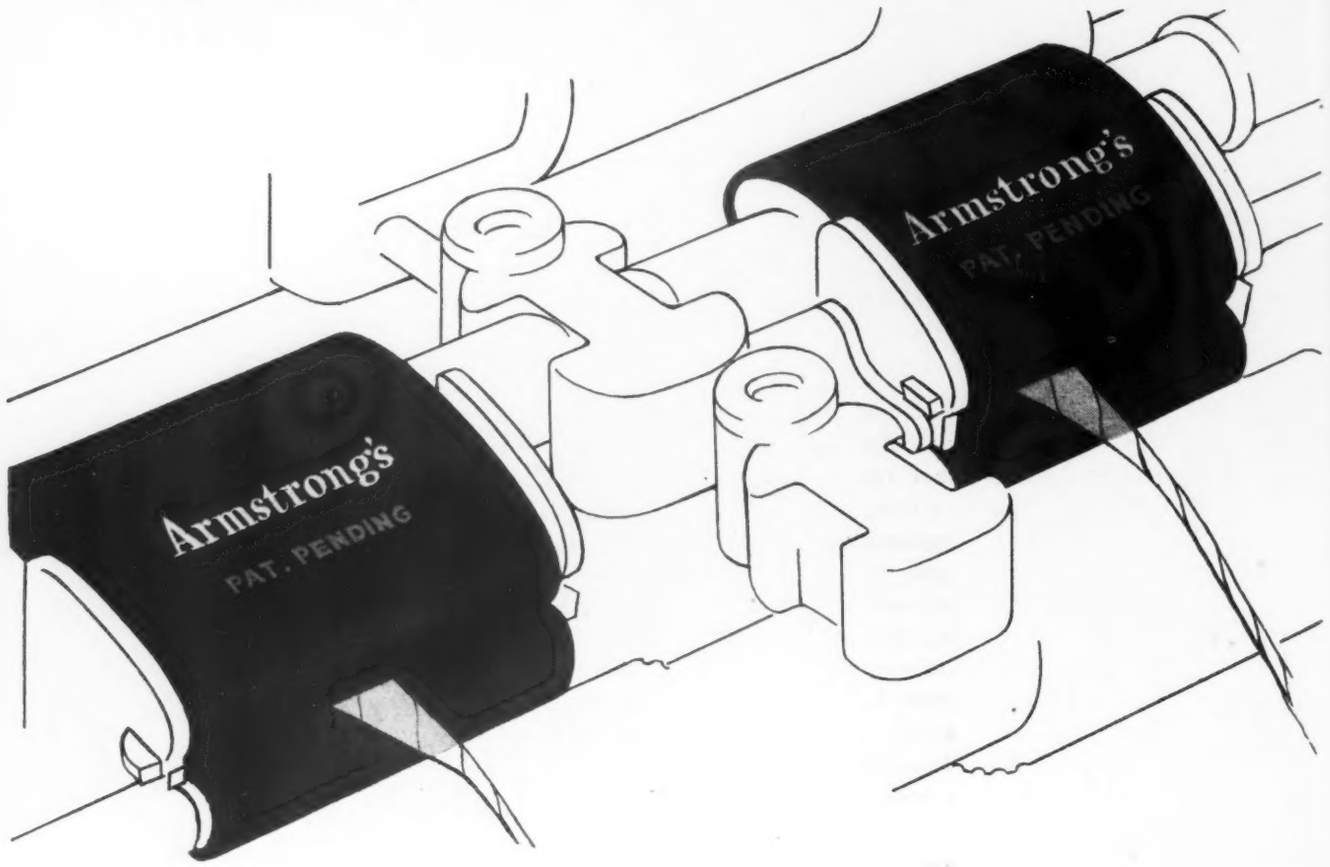
DU PONT
REG. U. S. PAT. OFF.

du pont rayon

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

KEEP IN TOUCH WITH DU PONT "MULTIPLE FIBER" RESEARCH

YOU GET MORE AND



Also by the makers of Accotex Aprons

. . . THE ACCOTEX COT

Created by the same specialized research and technical skill that produced Accotex Aprons, this synthetic cot is popular with mill men. Here are eight important reasons why Armstrong's Accotex Cots are now serving more spindles than any other synthetic roll covering:

1. **LONG SERVICE** — Accotex Cots are tough. And they can be rebuffed 5 or 6 times.
2. **GOOD DRAFTING**—Accotex Cots resist slicking.
3. **REDUCED EYEBROWING**—Resistance to slicking minimizes eyebrowing.
4. **SOLVENT RESISTANCE** — Accotex Cots are not affected by oil, water, dyes, or textile solvents.
5. **SEAMLESS CONSTRUCTION** —Accotex Cots have no seams—can't break open in service to shorten normal life.
6. **QUICK ASSEMBLY**—Accotex Cots are ready glued.
7. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers.
8. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.

BETTER PRODUCTION

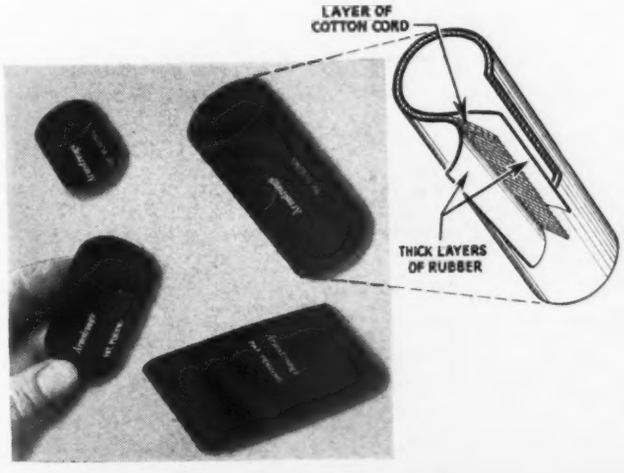
with these uniformly wearing aprons

You reduce maintenance, avoid shutdowns and production losses caused by premature wearing or scuffing of individual aprons when you run on Armstrong's Accotex Long Draft Aprons.

Once set up on your spinning and roving frames, Accotex Aprons give you better fiber control plus uniformly good service over a uniformly long period of time. That's because the tough synthetic rubber composition is exactly alike in every apron. Scientific formulation and laboratory-controlled manufacture eliminate variations which, in natural products, may cause uneven wear or premature failure.

Moreover, the special seamless construction of Accotex Aprons—with a sturdy cord interliner sandwiched between two thick layers of synthetic rubber—provides added assurance that they will not tear, break open, or stretch.

Get all the facts on Armstrong's uniformly wearing Accotex Aprons. Find out how they can help you spin higher quality yarn and increase poundage. Ask your Armstrong representative for samples, prices, and additional information. Or write today to Armstrong Cork Company, Textile Products Department, 8309 Arch Street, Lancaster, Penna.



Exclusive Armstrong Construction Gives You Extra Advantages

Diagram of Accotex Apron at left shows how heavy, seamless layers of non-oxidizing, highly oil-resistant synthetic rubber enclose a sturdy, non-stretch cord interliner. This special Armstrong construction not only helps prevent stretching or tearing of Accotex Aprons, but also offers these other big operating advantages:

LONG LIFE: Accotex Aprons in service for more than four years show little sign of wear.

CLEAN-RUNNING: Accotex Aprons do not crack or scuff. Thus they assure cleaner-running work and less waste.

REDUCED LAPPING: Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.

GOOD FRICTION: The efficient "grip" of Accotex Aprons keeps slippage at a minimum.

ARMSTRONG'S ACCOTEX APRONS

ACCOTEX COTS • CORK COTS

Anno

A BRILLIANT NEW H

HISTORY OF N

F. N. F.'s NEW *High-Speed* TRICOT KNITTING MACHINE

1 Easily knits at 1000 courses a minute—and this is a practical "cruising speed"!

2 Knits 20 inches (50 courses per inch) of 84 inch wide fabric per minute—33 linear yards per hour.

3 Operates without vibration or clatter.

4 Stops automatically if a single thread breaks.

5 Operates with extreme simplicity and high efficiency.

6 Engineered for long life with minimum maintenance.

7 Electrically controlled positive warp let-off continuously delivers yarn supplies *without any supervision!*

See it in operation—study its fine products

From October 10th to November 22nd, the F.N.F. machine, for which American Viscose Corporation is sole United States Sales Agent, will be set up and operating at the American Viscose Textile Research Department, Marcus Hook, Pa. At the same time, a collection of fine fabrics to show the patterning scope of the machine will be displayed.

In order to give visitors the fullest possible attention of our technical staff, it will be necessary to arrange visitors' appointments in advance. It is therefore requested that you write, suggesting a convenient date, directly to American Viscose Corporation, F.N.F. Sales Agents, 350 Fifth Avenue, New York 1, New York.

Sole Manufacturers:
F.N.F., LTD., Burton-on-Trent, Staffordshire, England

nouncing

W HAPTER IN THE

OF NITTING!

WITH F.N.F.'s DURABLE NEW

Tubular Compound Needle

The heart of the new F.N.F. machine is a tubular needle which provides many distinct advantages.

1. When closed, the overall hook dimension is smaller than that of conventional practice.
2. The hook capacity will readily accommodate an aggregate of 300 denier or equivalent count.
3. Greater strength and toughness for longer life; no beards or latches to break.
4. A smooth, rhythmical action provided by double eccentrics, and not cams.
5. Hook-closing member requires no adjustment.

Sole U. S. Sales Agents:

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

350 Fifth Avenue, New York 1, New York, U. S. A.

thermoplasticity
dielectric strength
mildew resistance

THESE are inherent characteristics of Eastman acetate rayon—Koda continuous-filament yarn and Teca crimped staple. They are properties which have proved their importance in specialized wartime applications—are now setting this fiber apart for a wide range of industrial uses.

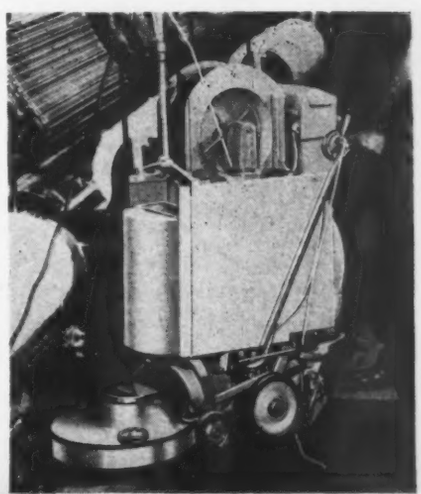
Where production or performance of textiles depends on heat-sealing qualities, dielectric strength, or resistance to mildew attack, Eastman acetate rayon may be the answer. For further information or technical advice, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York 16, sales representatives for Tennessee Eastman Corporation (Subsidiary of the Eastman Kodak Company), Kingsport, Tennessee.

Eastman Acetate Rayon

HIDDEN VALUES

OF THE CLEANSER THAT'S *SPECIALLY* COMPOUNDED FOR MACHINE-SCRUBBING

This type of Cleaning Compound—*Setol* for example—is designed for the greater speed of mechanical scrubbing. As a matter of fact, *Setol's* chemical action is *instantaneous!* And here's how it affects the over-all economy of machine-scrubbing: Because *Setol* keeps pace with the speed of the machine, operating time is reduced to the minimum required. This not only effects savings in labor costs, but prolongs the life of the machine. Mileage is not piled up needlessly as when a slow-acting cleanser is used. And conservation of mileage also conserves brushes—another of the *hidden values.*



In addition to *Setol*, the mineral oil solvent for use on mill and factory floors, *Finnell* also produces *Finola, the Original Scouring Powder*, and four other cleaning powders. All six are specially compounded for machine-scrubbing and are products of *Finnell's own powder mill.* For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1909 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

Never painted before, clothing plant made day-bright by one coat of . . .

CLOCK-WISE FASHIONS
FORMERLY CHECKERS CLOTHING CO.
MANUFACTURERS OF
Gad-about Sportswear — *Clock-Wise Junior Dresses*
1008½ Commerce St., Dallas 2, Texas

May 3rd, 1946

The Glidden Company
1029 Elm Street
Dallas, Texas.

Attention: Mr. R. J. Wilkinson

Gentlemen:

We have just painted the inside of our work shop at 211 North Austin Street. Although the inside of this building had never been painted before, the ceiling was of rough timber and the walls of brick and plaster, one coat of Spray-Day-Lite covered the ceiling and walls perfectly. We anticipated that it would be a difficult job to cover these surfaces with one coat, but we are highly pleased with the results obtained.

Yours very truly,

CLOCK-WISE FASHIONS

Edward F. Wel

President

Now there's also

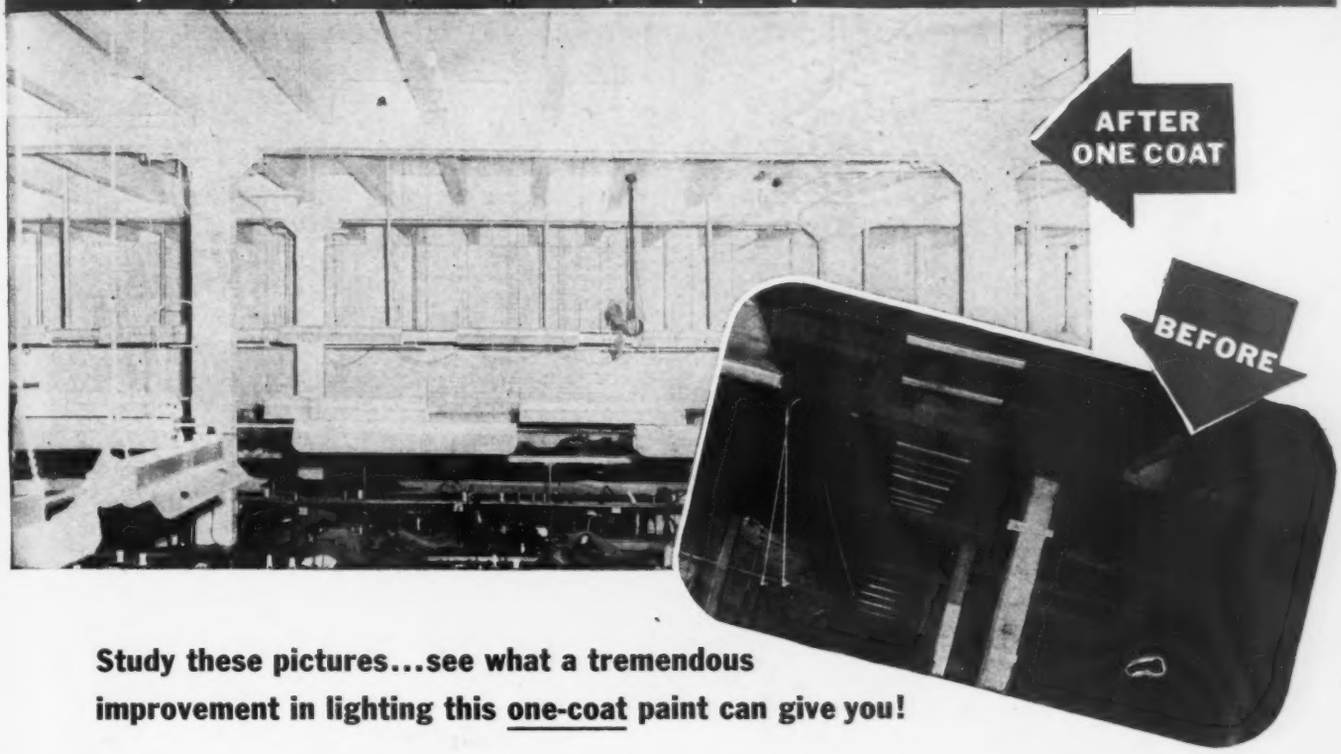
BRUSH-DAY-LITE

All of the established advantages of famous GLIDDEN SPRAY-DAY-LITE are now offered you in BRUSH-DAY-LITE, especially formulated for brush application.

"Styles of the Hour"

Glidden

SPRAY-DAY-LITE



Study these pictures...see what a tremendous improvement in lighting this one-coat paint can give you!

The amazing light reflection and diffusion of Glidden SPRAY-DAY-LITE combine to increase lighting efficiency in textile plants almost unbelievably. Only one coat does the job. And you enjoy these other advantages as well . . .

1. **SPRAY-DAY-LITE provides smooth, solid covering over grimy, dirty and badly discolored surfaces of almost any type.**
2. **Its intense white does not yellow with age (also available in 10 beautiful colors).**
3. **Durable, egg-shell finish eliminates eye-straining glare—washes like tile.**
4. **Sprayed or brushed, it does not sag or run; produces little fog or mist when sprayed.**

Check coupon at right for Color Chart which gives you a choice of many attractive color combinations. Check also for demonstration of SPRAY-DAY-LITE on any interior surface you may name. *Mail the coupon today!*

SEND FOR THIS VALUABLE BOOK ON "SIGHT PERFECTION" FREE!

Tells and *shows* you how to follow scientific, E-Z-C Color-Planning in painting machines and interiors to ease eyestrain, boost production, reduce accidents. If all the guidance you need isn't in this book, a request to the Glidden Color Studio will bring you further help from our color engineers.

THE GLIDDEN COMPANY
Dept. T-9, 11001 Madison Ave., Cleveland 2, Ohio

- ☐ You may send your new SPRAY-DAY-LITE Color Chart showing the 10 beautiful shades and suggested color combinations.
- ☐ You may have representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.
- ☐ You may send your free book, "Sight Perfection".

NAME _____

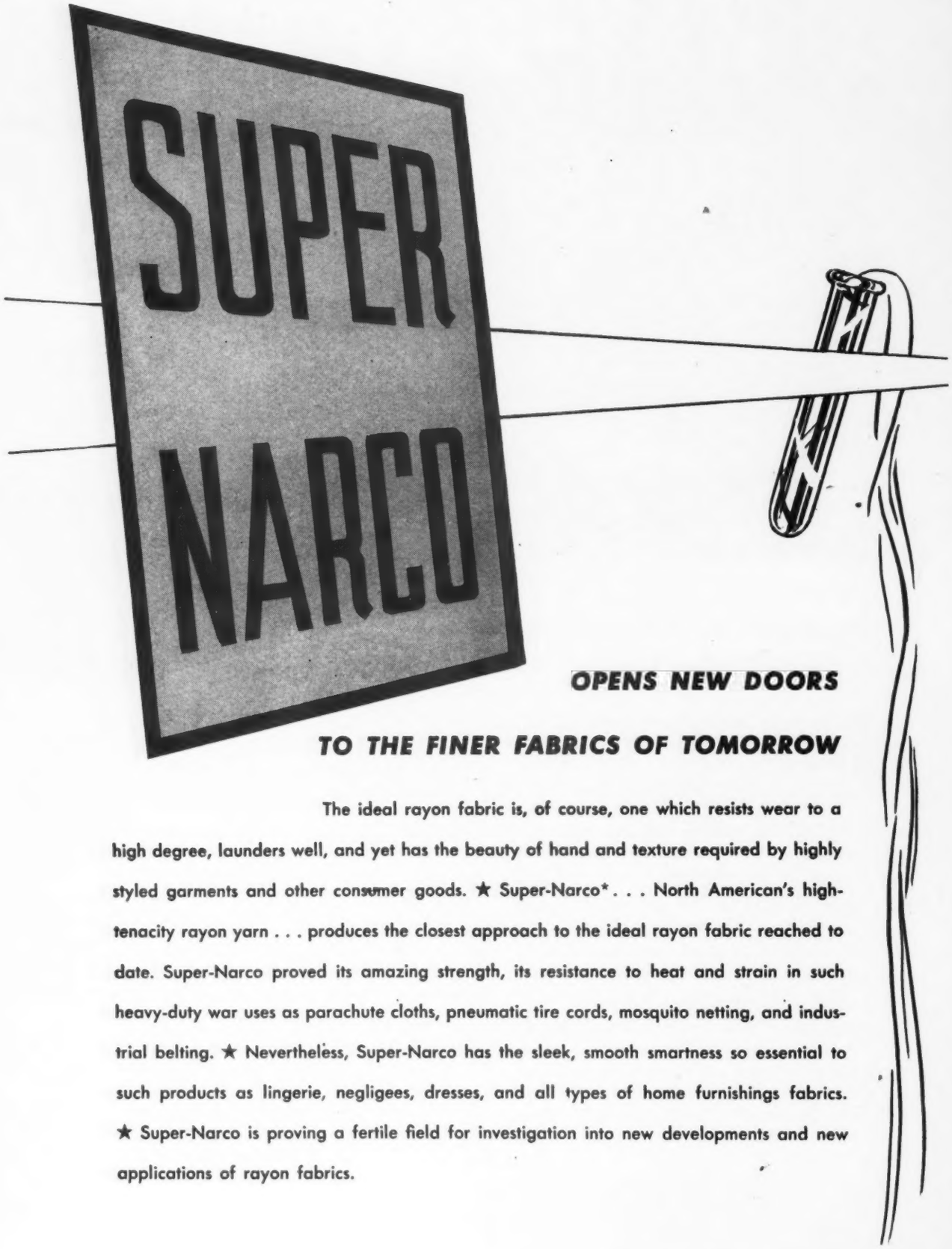
COMPANY _____ TITLE _____

ADDRESS _____

CITY AND STATE _____

GLIDDEN

Pacemaker in Paints



OPENS NEW DOORS

TO THE FINER FABRICS OF TOMORROW

The ideal rayon fabric is, of course, one which resists wear to a high degree, launders well, and yet has the beauty of hand and texture required by highly styled garments and other consumer goods. ★ Super-Narco*. . . North American's high-tenacity rayon yarn . . . produces the closest approach to the ideal rayon fabric reached to date. Super-Narco proved its amazing strength, its resistance to heat and strain in such heavy-duty war uses as parachute cloths, pneumatic tire cords, mosquito netting, and industrial belting. ★ Nevertheless, Super-Narco has the sleek, smooth smartness so essential to such products as lingerie, negligees, dresses, and all types of home furnishings fabrics. ★ Super-Narco is proving a fertile field for investigation into new developments and new applications of rayon fabrics.

NORTH AMERICAN
RAYON CORPORATION
261 FIFTH AVENUE, NEW YORK 16, N. Y.

*Reg. U. S. Pat. Off.

DO YOU KNOW
National Aniline is the sole American producer of every class of aniline dye and color.
National Aniline offers the industry's broadest experience in color application in every field where aniline dyes are used. May we work with you on your next color match?
WHEREVER COLOR IS USED
National Aniline
DIVISION OF
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET NEW YORK 6, N. Y.
BOSTON · PROVIDENCE · PHILADELPHIA · CHICAGO · SAN FRANCISCO · CHARLOTTE
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L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N.Y.

Telephone: AShland 4-8650

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For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

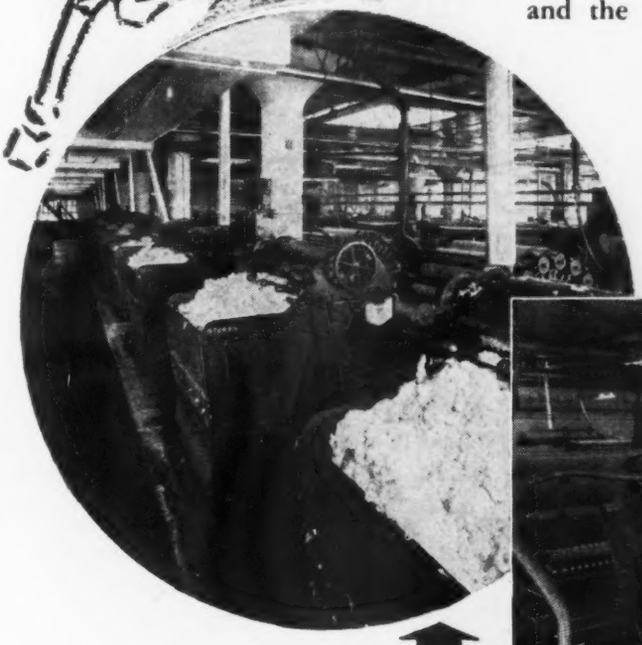
Leading from the start . . .

. . . and still out in front!

WHITIN WOOLEN CARDS

Whitin Woolen Cards have long been acknowledged leaders in their field. Not only before the war — or during the war — but right now, in 1946, they are still out in front. This leadership is based on a firm foundation — a foundation of 3 basic elements, superior design, expert workmanship and the highest quality materials.

In actual operation, these basic elements produce direct benefits through better carding and higher productions. In addition, their trouble-free operation reduces maintenance to a minimum. Don't be satisfied to "place" or "show"— put your money on the "Winner".

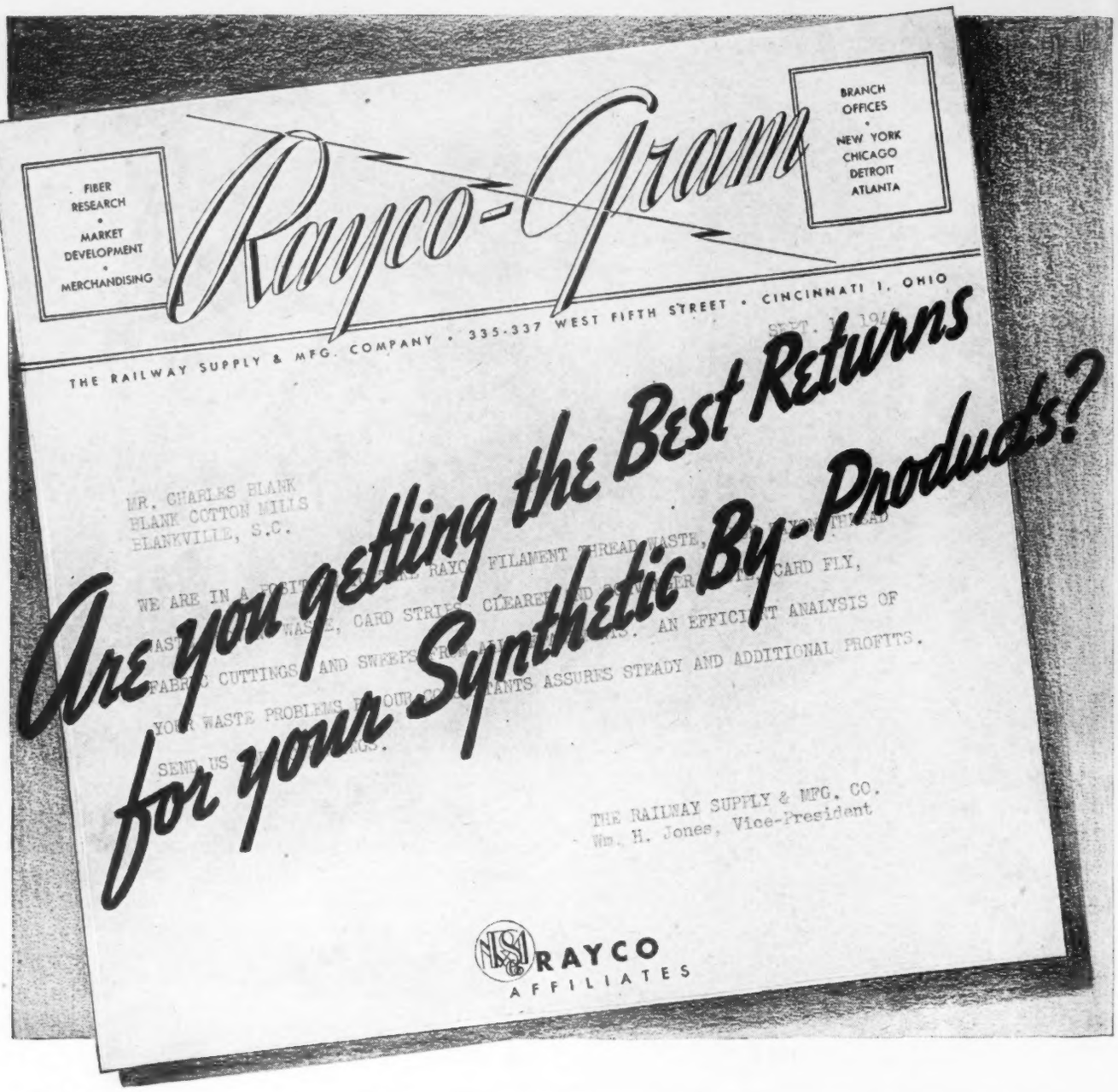


Mill installation views at the Excelsior Mill of Deering, Milliken Co. at Union, S. C.

Whitin MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. ATLANTA, GA.


FIBER RESEARCH • MARKET DEVELOPMENT • MERCHANDISING
Rayco-Gram
BRANCH OFFICES • NEW YORK CHICAGO DETROIT ATLANTA
THE RAILWAY SUPPLY & MFG. COMPANY • 335-337 WEST FIFTH STREET • CINCINNATI 1, OHIO
Are you getting the Best Returns for your Synthetic By-Products?
MR. CHARLES BLANK
BLANK COTTON MILLS
BLANKVILLE, S.C.
THE RAILWAY SUPPLY & MFG. CO.
Wm. H. Jones, Vice-President
RAYCO
AFFILIATES

IF not—be sure to read every Rayco-Gram that comes to your desk. These up-to-the-minute messages will keep you informed of new and interesting developments in the Railway Supply research and merchandising program—a program of scientific "engineered selling" to help you realize greater returns from your synthetic waste sales.

Upon request a Rayco fiber engineer will visit your mill, at no obligation, and make a detailed analysis of your by-products. He will then recommend the most profitable, specific end uses for these materials.

Get in touch with us if you wish to dispose of rayon filament thread waste, spun rayon thread waste, roving waste, card strips, clearer and scavenger waste, card fly, fabric cuttings or sweeps.

Your inquiries and offerings will receive our prompt attention.

The RAILWAY SUPPLY & MFG. CO. and Affiliates

Specialists in Grading, Marketing and Processing Cotton and Synthetic Fibers.

General Offices: Cincinnati, Ohio

Plants and Sales Offices:

Cincinnati, Ohio
Franklin, Ohio
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Charlotte, N. C.
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New York, N. Y.
Chicago, Ill.
Detroit, Mich.

RAYCO SYNTHETIC FIBERS

PEPPERELL FABRICS

a name chosen for prestige ... uses

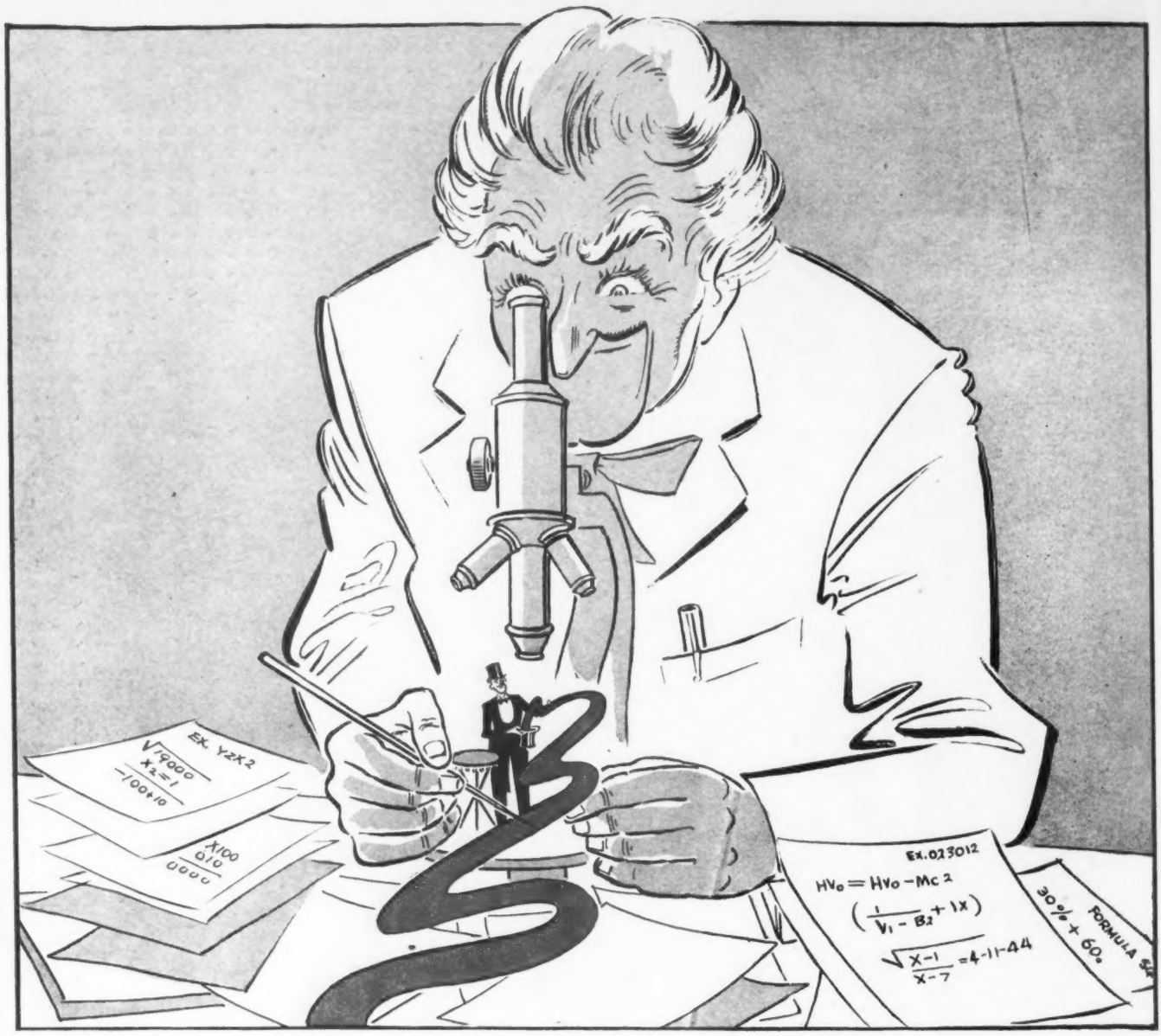
LAWRENCE CALFSKINS

the name leading mills choose

Pepperell Manufacturing Company, like many other top-ranking cotton mills, uses Lawrence Calfskins for spinning-frame aprons, to assure the finest in spinning results. More mills insist on Lawrence Calfskins than any other brand. Experience has taught them, first, that perfect drafting comes from the *natural* surface of calfskin ... second, that Lawrence experience in product research, manufacture and detailed inspection results in uniform high quality.

Lawrence Calfskins for your aprons assure you the excellent performance and longer-lasting resilience that have always characterized the Lawrence brand. A. C. Lawrence Leather Company, Peabody, Mass., manufacturers of Lawrence Spinna Calf for roll coverings. Represented by H. H. Hersey, Greenville, S. C.

EVERY YEAR MORE PEOPLE DECIDE LEATHER IS BEST



It's Always Safer to Put "Miracles" Under the Microscope!...

In explorations into the feasible futures of new methods and materials . . . as far as their uses in loom-components are concerned . . . C & K's Engineering Research Laboratories maintain an "open door policy" to new ideas.

For instance, the *light metals* have been for some time under test. And C & K has worked out the first *magnesium* lay to be built into a loom. *Plastics* are adopted wherever they prove practical and economical.

In *hydraulics,* there are exhaustive experiments under way on certain loom-motions . . . experiments that are being checked by the highest authorities in this science.

And applications of *electronics* to various loom motions are undergoing investigations and tests.

Parallel with all these studies—and purely as a research tool—C & K has pursued its own course in the development of *high-speed photography* . . . designing an unique camera which keeps an all-seeing eye on all new features of loom-design, and clearly reveals the truth as to whether these features are operationally sound.

So you may be sure of this: Any modern method or material, if it proves practical and economical, will be used for all it's worth, to give you higher loom-speeds and quality of fabrics . . . longer periods of uninterrupted operation and longer life for loom parts . . . lower costs for loom maintenance and over-all weave-room operation. You can be sure that no modern miracle will be accepted, here, at face-value . . . not until it has proved its value *to you,* by answering "yes" to one or more of these six questions:

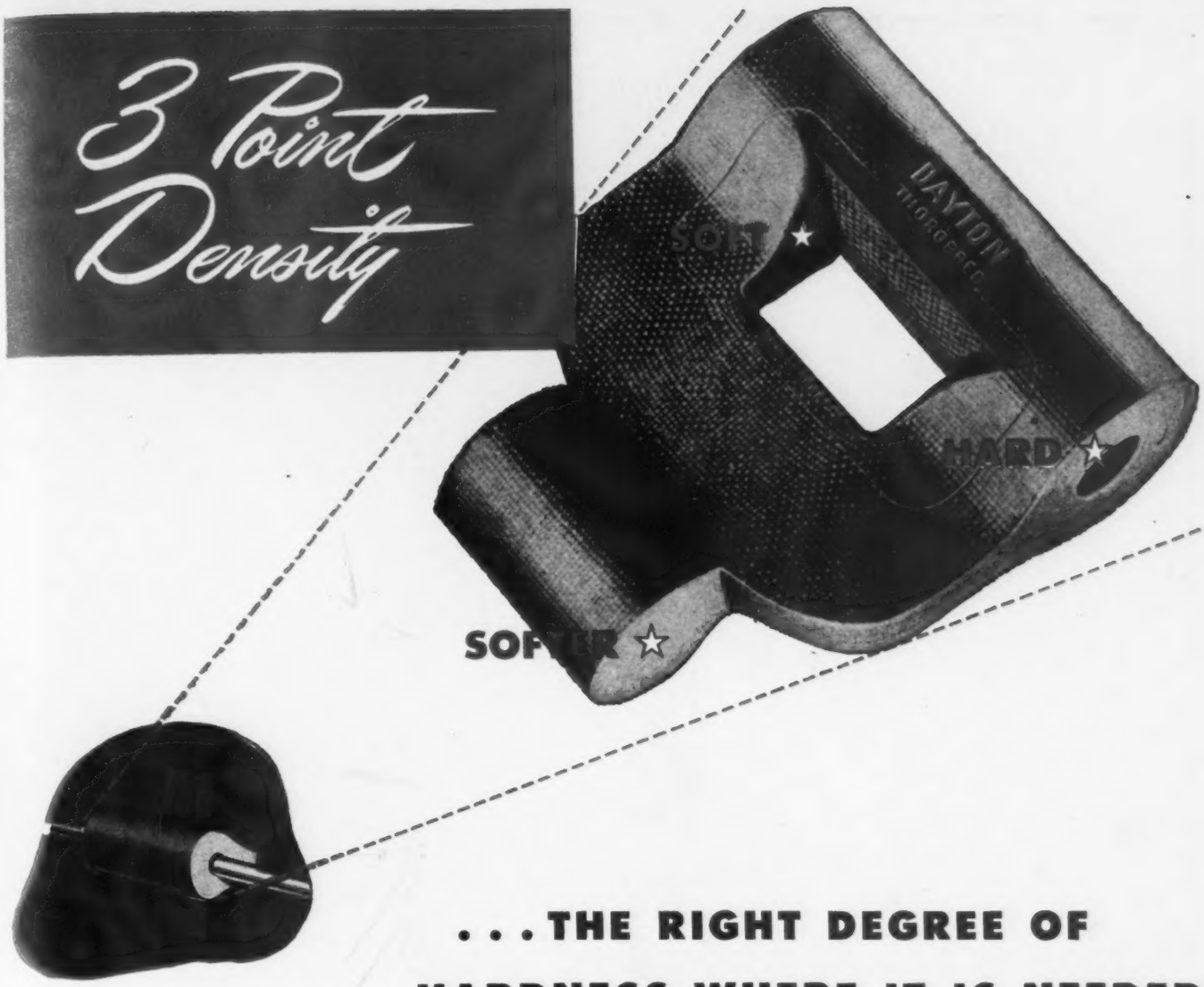
1. Does it increase Speed of Loom Operation?
2. Does it increase Ease of Loom Operation?
3. Does it improve Quality of Fabric?
4. Does it decrease Cost of Maintenance?
5. Does it improve Continuity of Operation?
6. Does it improve Appearance and Utility?

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co.
Pawtucket, R. I.

between Today's Knowledge . . and Tomorrow's Looms

3 Point Density



. . . THE RIGHT DEGREE OF HARDNESS WHERE IT IS NEEDED

Here is why the Dayton Reversible Drop Box Picker can outperform and outlast any picker on the market:

It has an extremely hard bearing surface around the spindle hole. Thus the hole stays round, won't wear egg shaped.

To take the impact of the picker stick and prevent wear, the area around the picker stick hole is made of a soft composition.

A still softer composition at the shuttle contact prevents shuttle point loosening and helps assure a perfect throw at all times.

If you are not using a Dayton Reversible Picker why not buy a few and let them show you what they can do. Complete information is given in the new Dayton Textile Catalog which also contains complete information on a long list of other Dayton textile machinery parts. Write for your copy right now.

THE DAYTON RUBBER MANUFACTURING CO.
MAIN SALES OFFICE: GREENVILLE, S. C.
FACTORY: WAYNESVILLE, N. C.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

A FOOTBALL PLAYER is no better than his LEGS

And a CARD is no better than its CLOTHING

Weak legs never made a good football player, and poor card clothing or improperly selected clothing never makes for good carding.

Ashworth card clothing is synonymous with quality, and Ashworth service enables you to keep it in good condition and to select the right clothing for the purpose.

If you have a card clothing problem, let one of our practical service representatives make recommendations. This same representative will, if you so desire, inspect your cards (including clothing, bearings and chains), free of charge, at regular intervals, and recommend a repair program involving minimum expense and minimum loss of productive time.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO.
(Woolen Div.)

Fall River*†‡ Worcester*‡ Philadelphia*†‡
Atlanta†‡ Greenville†‡ Charlotte†‡
Dallas†‡ (Textile Supply Co.)

** Factory † Repair Shop ‡ Distributing Point*

PRODUCTS AND SERVICES:

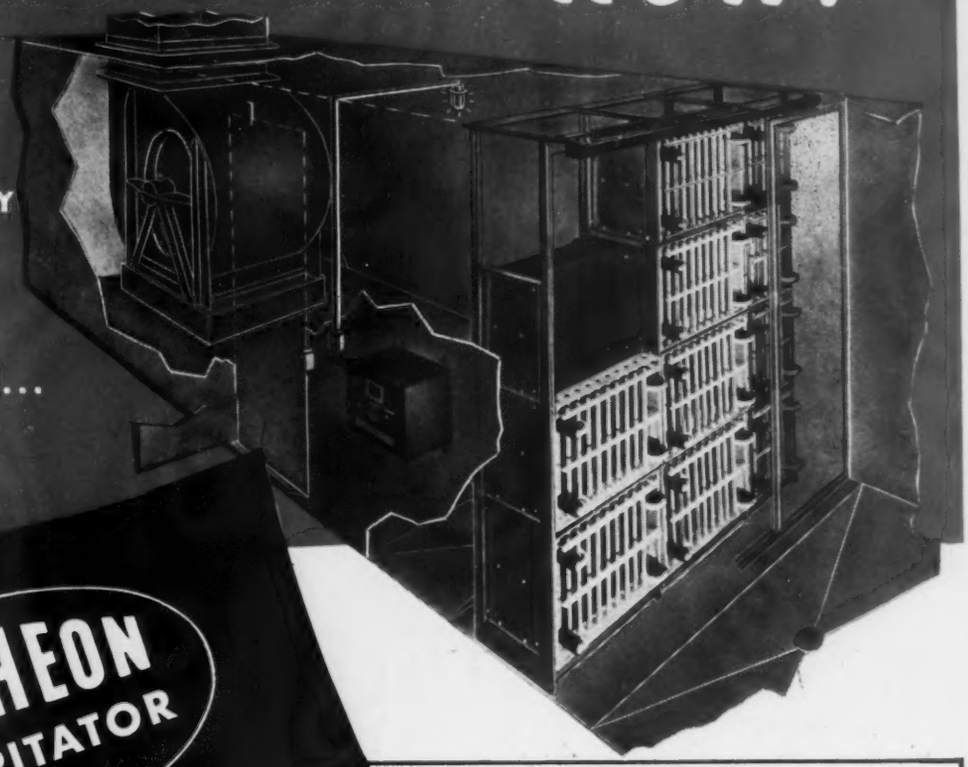
Card Clothing for Cotton, Wool, Worsted, Silk Rayon and Asbestos Cards and for all types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

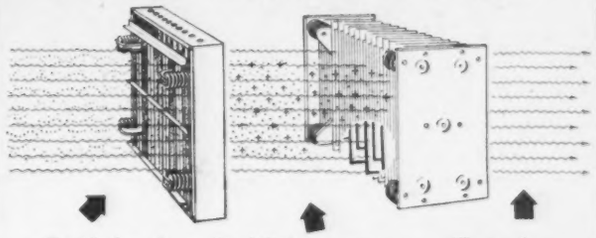
RAYTHEON IS READY *NOW!*

TO BRING YOU
EVERY LAST PENNY
OF PROFIT FROM
ELECTRONICALLY
CLEAN AIR WITH...



THE RAYTHEON PRECIPITATOR

HOW THE PRECIPITATOR WORKS



● *for spinning, twisting, weaving rooms—everywhere clean air pays dividends*

● Before you invest in air cleaning equipment of any kind, investigate the new Raytheon Precipitator. It has what it takes to rid the vital parts of your mill of airborne dust, dirt and smoke at lowest net cost. Raytheon engineers are ready to give you the facts and figures right now! Get the whole story on this great advance in air cleaning methods and equipment. Write for Bulletin DL-P-503.

The Raytheon Precipitator is ingeniously designed in cell-units like building blocks so that your installation is exactly fitted for the job however large or small. Result: maximum net profit from clean air.

The Raytheon Precipitator really gets the dirt. It removes particles as small as one 250,000th of an inch in diameter. It's many times as efficient as the ordinary air filter.

MILLS IN THE SOUTHEAST may obtain prompt sales and engineering service from Raytheon's *Southeastern District Office, 306 Candler Building, Atlanta, Ga., Mr. Roy E. Cawhern, Manager*

RAYTHEON

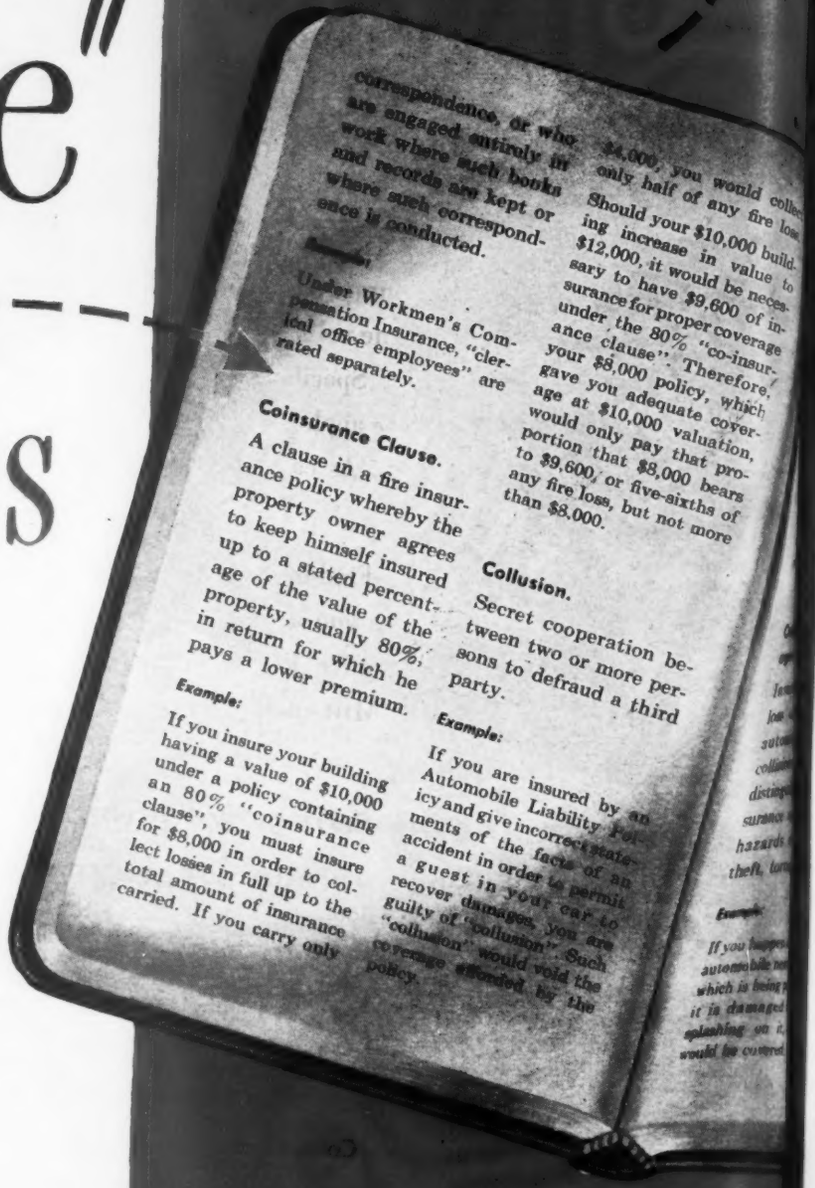
RAYTHEON MANUFACTURING COMPANY
Industrial Electronics Division, Waltham 54, Massachusetts

Builders of Raytherm Dielectric Heaters for every textile yarn and fabric application and other Electronic Products for Industry

Excellence in Electronics

SALES OFFICES: ATLANTA • BOSTON • CHICAGO • CLEVELAND • LOUISVILLE • NEW YORK

"Coinsurance Clause"



correspondence, or who are engaged entirely in work where such books and records are kept or where such correspondence is conducted.

Example:

Under Workmen's Compensation Insurance, "clerical office employees" are rated separately.

Coinsurance Clause.

A clause in a fire insurance policy whereby the property owner agrees to keep himself insured up to a stated percentage of the value of the property, usually 80%, in return for which he pays a lower premium.

Example:

If you insure your building having a value of $10,000 under a policy containing an 80% "coinsurance clause", you must insure for $8,000 in order to collect losses in full up to the total amount of insurance carried. If you carry only $4,000, you would collect only half of any fire loss.

Should your $10,000 building increase in value to $12,000, it would be necessary to have $9,600 of insurance for proper coverage under the 80% "co-insurance clause". Therefore, your $8,000 policy, which gave you adequate coverage at $10,000 valuation, would only pay that proportion that $8,000 bears to $9,600, or five-sixths of any fire loss, but not more than $8,000.

Collusion.

Secret cooperation between two or more persons to defraud a third party.

Example:

If you are insured by an Automobile Liability Policy and give incorrect statements of the facts of an accident in order to permit a guest in your car to recover damages, you are guilty of "collusion". Such "collusion" would void the coverage afforded by the policy.

EMPLOYERS MUTUALS

(OF WAUSAU)

make this and other Insurance terms Understandable

EMPLOYERS MUTUALS of WAUSAU

It is important to you to understand what "Co-insurance Clause" means. It may cost you money not to know.

It is equally important that you know, and understand, many other terms used in insurance policies.

You CAN Understand Insurance

You will begin to understand insurance as soon as you know the meanings of insurance terms.

Here is the most important and helpful book ever published. More than 200 insurance words and phrases have been defined in one volume in completely nontechnical language. Specific examples are cited to demonstrate the application of many of these insurance terms. As easy to understand as A B C.

Write for your FREE copy today. Find out for yourself how this Dictionary helps you understand insurance. Address: Insurance Information Bureau, Employers Mutuals of Wausau, Wausau, Wisconsin.

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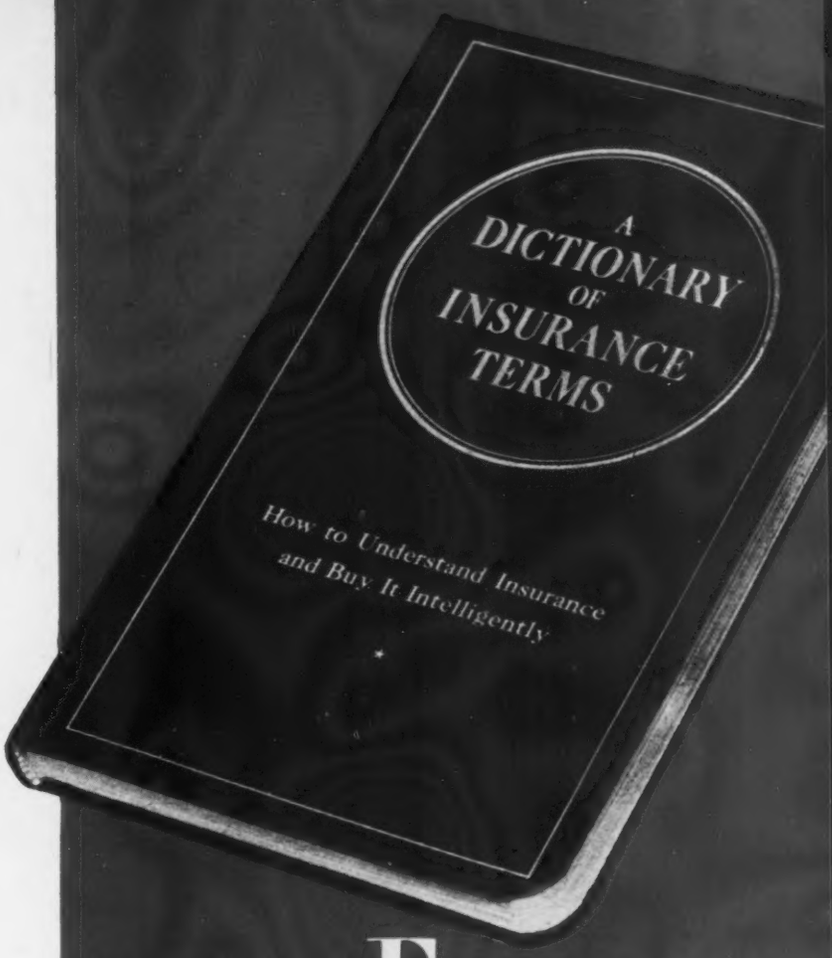
Public Liability . . . Automobile . . . Plate Glass . . . Burglary . . . Workmen's Compensation . . . Fidelity Bonds . . . Group Health, Accident, Hospitalization . . . and other casualty insurance . . . Fire . . . Tornado . . . Extended Coverage . . . Inland Marine . . . and allied lines of insurance. All policies are nonassessable.

Branch offices in principal cities. Consult your telephone directory.



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A Dictionary of Insurance Terms

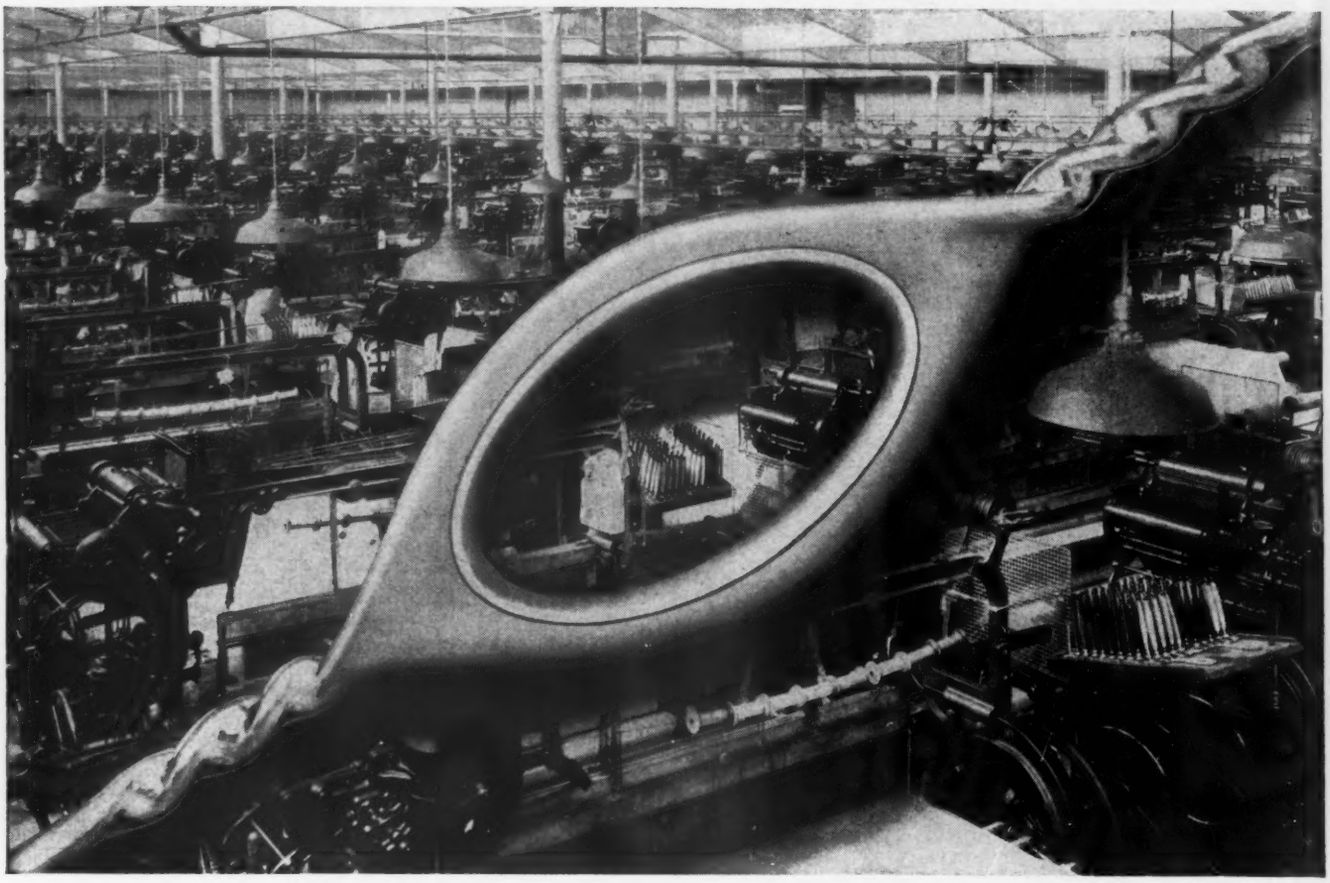
How to Understand Insurance and Buy It Intelligently

The BIGGEST little book ever written on insurance—the little book that helps you understand a big business as it concerns you.

make Insurance Understandable

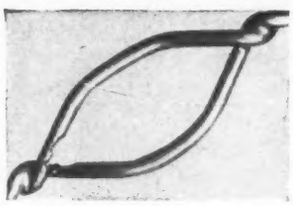
EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
EMPLOYERS MUTUAL FIRE INSURANCE COMPANY
Home Office: WAUSAU, WISCONSIN

Reduce wear on Heddle and Warp



with TUFFER Inserted-eye Heddles

The TUFFER Inserted-eye—a smooth, one-piece ring of metal—resists wear and gives long, trouble-free service. Contrast this with the picture of the ordinary heddle. Notice that after a period of service grooves begin to appear which chafe the warp and cause broken ends.



Ordinary Twin Wire Heddle

TUFFER Inserted-eye Heddles give longer service and smoother operation. They are available with any size and shape of center and end eye and in any size wire.

Write for samples

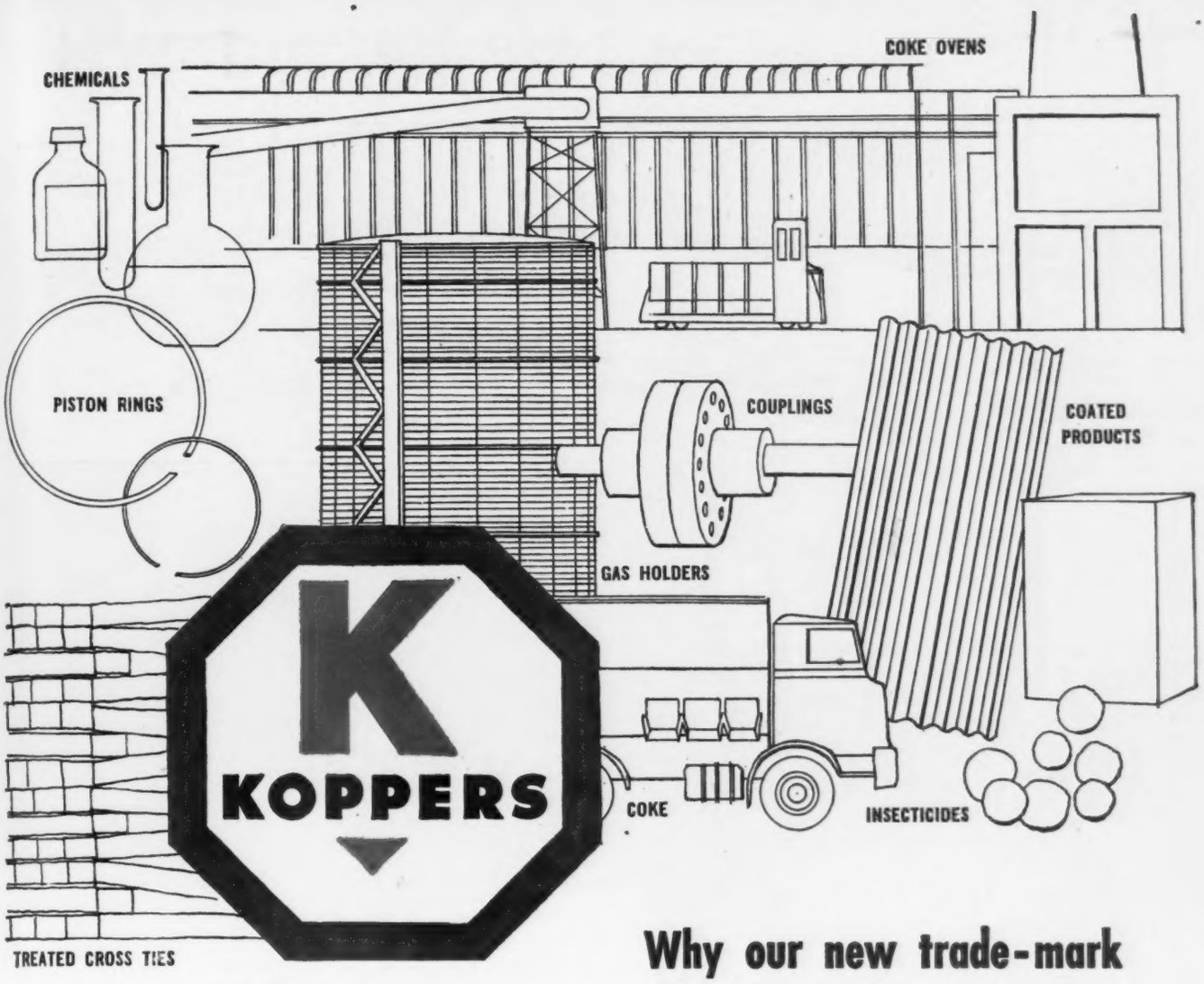
Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

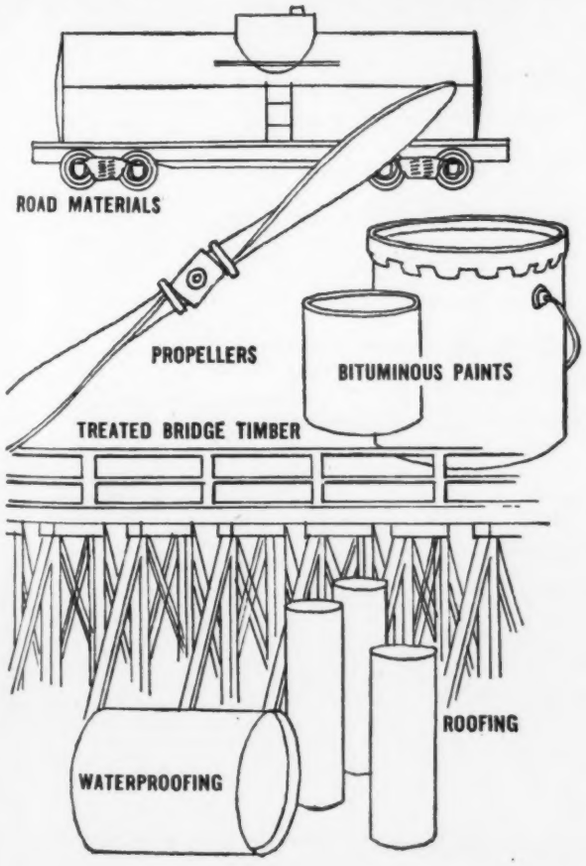
TUFFER CARD CLOTHING

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Austin **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2





Why our new trade-mark is important to you

Every day, you place your health, your safety, your children, even your life at the mercy of manufacturers whose products you trust.

Often you do it because of some small mark which doesn't actually say anything in words, but which says volumes in the meanings you read into it.

That's what trade-marks mean to the American people. In effect, the trade-mark says, "Here is a manufacturer who is so sure of this product that he puts his name on it."

That's why our new Koppers trade-mark is important to you.

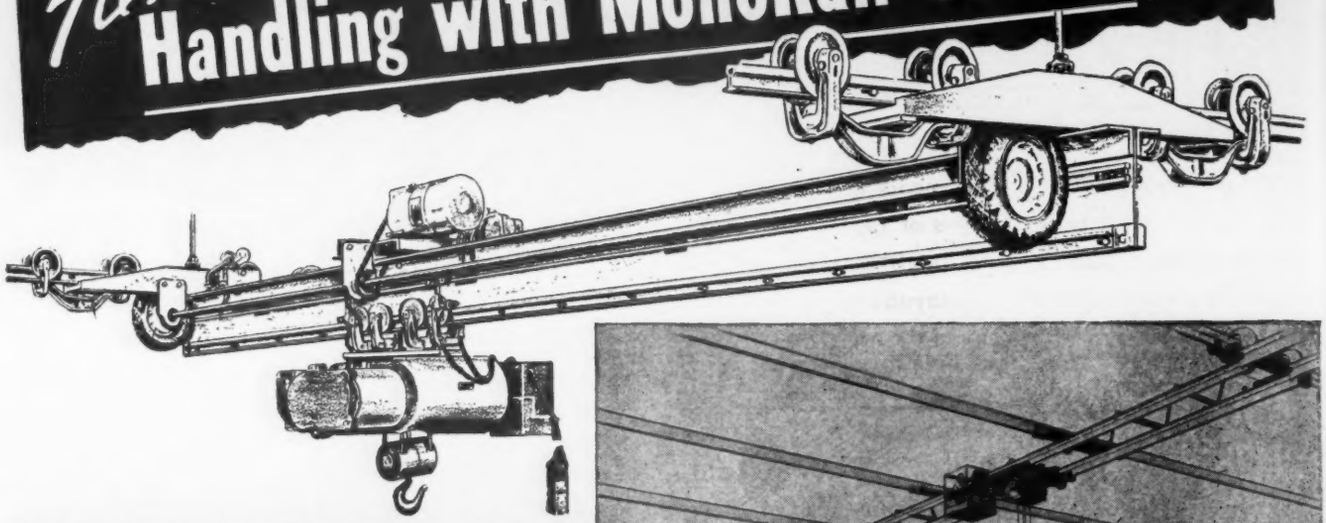
There are dozens of Koppers products; there will be dozens more as opportunities expand in the rapidly growing chemical field.

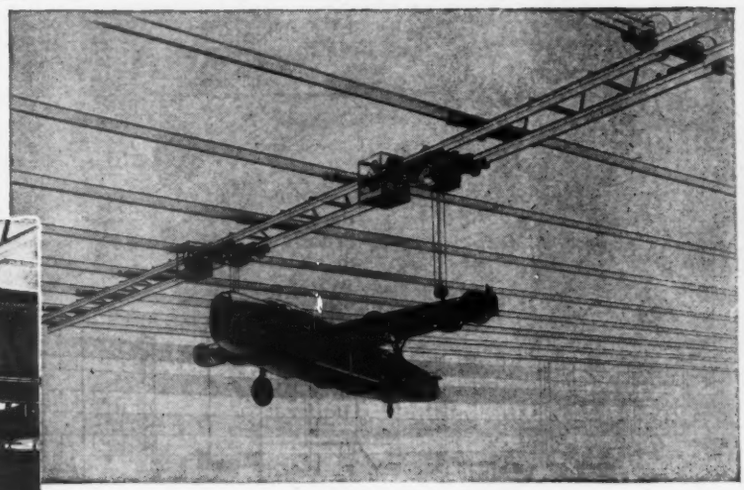
Often you will not be able to see the Koppers label on those products—you can't see it, for example, on road paving material or on a bottle of medicine—but the roadbuilder sees it and the medicine maker sees it, and their confidence in it is your safeguard.

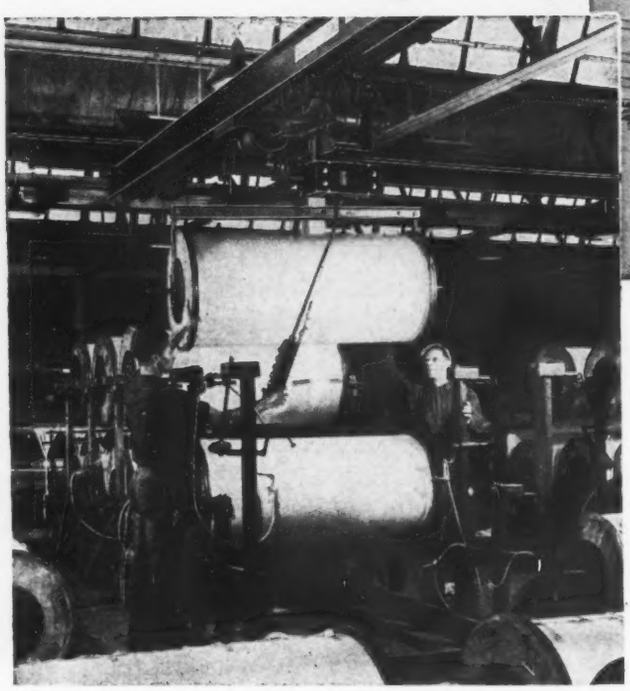
Koppers also is well known as a dependable source for many other products and services which we furnish directly, such as the design and construction of coke ovens, roofing material, piston rings, couplings, propellers for your private plane, coke for your furnace, moth balls for your clothes, paints, pressure-treated wood and scores of others.—Koppers Company, Inc., Koppers Building, Pittsburgh 19, Pa.

KOPPERS—THE INDUSTRY THAT SERVES ALL INDUSTRY

Flexible Handling with MonoRail Cranes



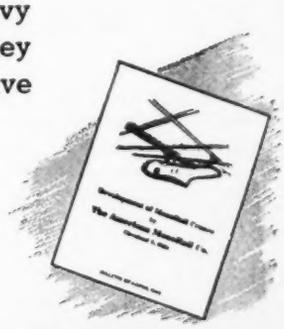




American MonoRail Cranes are not limited to bridging a single span. With their special interlocking and twin bridge designs, they supply over-all coverage . . . your handling is not tied down to alleyways or spotting or unloading near permanent equipment.

American MonoRail Cranes are available for any type of job — heavy or light duty — full automatic, cab controlled or hand operated. They can be installed under present operating conditions without excessive structural changes.

GET A COPY OF THIS BOOKLET! It tells the complete story of monorail crane development. Learn how cranes have been adapted to all kinds of handling operations. Ask for Bulletin MF-1.

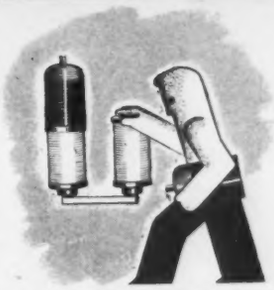


THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE — CLEVELAND 7, OHIO

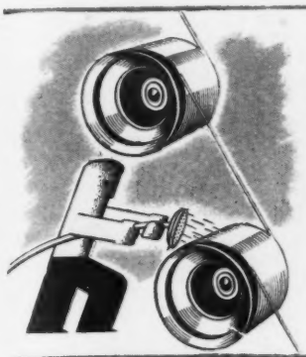
where there's a will there's a *better* way...

Here are some accomplishments in chemical, mechanical and textile phases of rayon production brought into being through the initiative and inventions of Industral Rayon's technicians. They had the will; they found the *better* way.



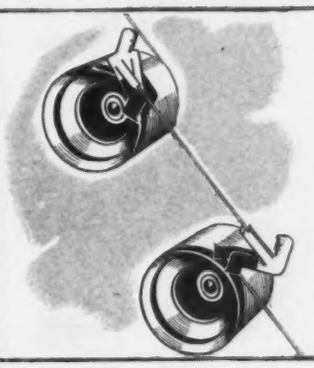
continuous process

A revolutionary viscose rayon production method that spins, washes, bleaches, treats, dries and twists yarn in one continuous operation, delivering a package with a minimum of knots and broken filaments. Because it is fully processed before it is wound into a package, the yarn is "ready to go" when it leaves the machines.



individual thread treatment

By means of thread advancing reels, the heart of the Continuous Process, yarn is carried through all of its processing stages as a single thread layer, never touching any part of its own length. Processing solutions can therefore be applied evenly to every inch of every filament and a yarn of unsurpassed uniformity is produced.



reel-slashing

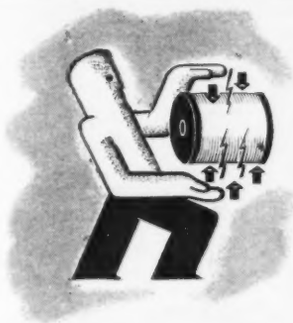
The Continuous Process demonstrates its flexibility in producing tire yarn by stretching and finishing the yarn as it passes over thread advancing reels. By conventional methods, high tenacity yarn must be slasher-stretched and finished after the yarn is collected into a package. Reel slashing eliminates this extra operation.

up-twisting

With tire yarn delivered fully stretched and processed on bobbins instead of beams, it can be up-twisted into cord, dispensing with the rings, travellers and greasing of the down-twist process. It is therefore cleaner, subject to less surface abrasion and is wound on large, knot-free packages that require no separate spooling operation.

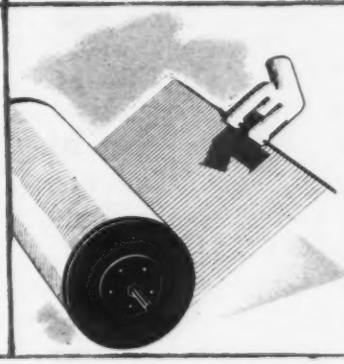
giant coning

Precision wound cones of tire cord weighing more than 18 pounds—the largest ever produced, help tire manufacturers maintain maximum operating efficiency in making weftless tire cord fabrics. To produce these cones of knotless cord, Industrial's technicians had to make many ingenious adaptations of existing machinery.



lektrosetting

Large cones could not be twist-set by ordinary methods of applying heat and moisture. This problem was solved by developing a new electronic process, known as *LEKTROSET. By this process, cord on both cones and spools is uniformly set as the packages are passed through a high frequency field by means of an endless conveyor belt.



multiple beam weaving

To maintain the uniformity created in yarn produced by the Continuous Process and fully retained in up-twisting and Lektrosetting of cord, multiple-beam weaving of fabric was introduced. Instead of weaving from thousands of spools, cord is fed from several beams directly into the loom. Thus, it is far easier to equalize tension and produce a more uniform fabric.

finding better ways is a guiding principle at Industrial Rayon, and these achievements attest the value of that principle. It is your assurance that you can always look to Industrial for improved products and increased efficiency in rayon production.

Industrial RAYON CORPORATION
CLEVELAND, OHIO
NEW YORK OFFICE, 500 FIFTH AVE.

MAKERS OF

*Spun-lo RAYON YARN AND CLOTH and *TYRON YARN, CORD AND FABRIC

*Reg. U. S. Pat. Off.

Mr. Renfrew tries reducing

WHEN it comes to shrinking a waistline, that steamy heat in the cabinet does a job. But, unfortunately for Mr. Renfrew, a combination of heat and humidity is doing some reducing down at his textile mill. It's cutting down his output and his profit.

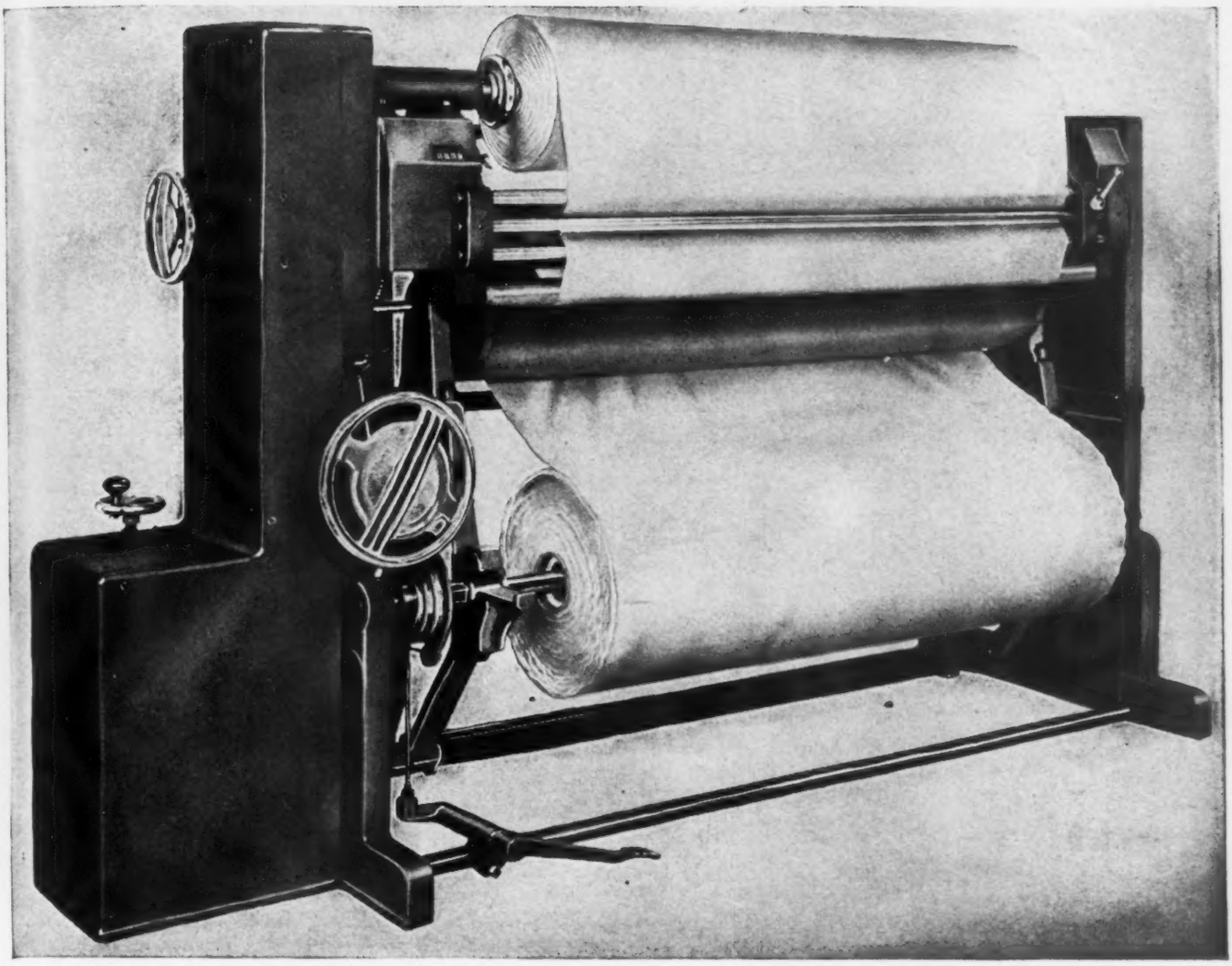
Every textile man knows it's impossible to maintain the delicate adjustment of machines when the temperature and humidity vary from hour to hour. Yarns chafe when the humidity is too low. Metal parts expand when temperature soars. The result is repeated adjustments and the loss of vital time and production. These and other headaches in a textile mill are cured with the right kind of air conditioning—the Carrier kind.

Carrier engineers have been helping leading textile manufacturers iron out production difficulties with complete, year-round air conditioning for more than 40 years. They've reduced static electricity and reduced fly and lint, too. They've provided refreshing weather the year round, preventing hot-weather shutdowns and stepping up workers' production.

Carrier air conditioning is the product of specialists. The air-conditioning industry was created by Carrier and every major advance has been made possible by its research and engineering skill. Its engineers are constantly finding better ways to help textile mills improve quality and output. Chances are they can find the answer to the question that's troubling you. Why not put your problem up to them? Carrier Corporation, Syracuse, New York.

Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING



TIME TESTED—NOW EVEN BETTER

This Van Vlaanderen Tubing Machine has done excellent work through the war years. Now it has been improved to process up to 250 yards a minute and to take larger diameter rolls on tubes.

Operation of the machine is through mechanical controls within easy reach of the operator. Cloth speed is constant and measuring is accurate and dependable. Ball bearings are used throughout. Motor and I-3 variable speed drive. Lubricated parts are sealed in oil.

Write for descriptive leaflet

VAN VLAANDEREN
MACHINE COMPANY

370 STRAIGHT ST., PATERSON 3, NEW JERSEY

World's largest manufacturer of machines for processing modern fabrics

It takes more than "Magic"...

Seems like magic, the way modern chemists cook up one new synthetic fiber after another in their test tubes.

But, as every mill man knows, it takes more than "magic" to process a new fiber into marketable yarns and fabrics – and still make a profit. It takes hard, patient work, and all the skill and resourcefulness even the best men can apply.

You can do it alone, if you have the time to experiment until you clear out all the "bugs". But it's better, and much faster, to start several steps ahead, with information already worked out by others.

The Victor Service Engineer can give you that kind of information on spinning and twisting, whether you are running straight synthetics, blends, or conventional fibers. He'll bring you the friendly, result-getting Victor service that has made Victor Travelers standard for over 8,000,000 spindles.

Write, wire, or phone for prompt service.

Keep a Step ahead with

VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 0737

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in Curtain Fabrics too

FINE KNITTING

by

TORRINGTON NEEDLES

IN CURTAIN and DRAPERY FABRICS the inherent advantages of knitting—strength, elasticity, freedom from creasing and wrinkling—as well as excellent "drape" and other qualities—are all potent selling features.

The use of good needles is essential in imparting both the quality and practical appeal in such fabrics. Let Torrington Needles, with their machine-made, machine-controlled temper, finish and accuracy, help you achieve the highest knitting standards.

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A.
Established 1866

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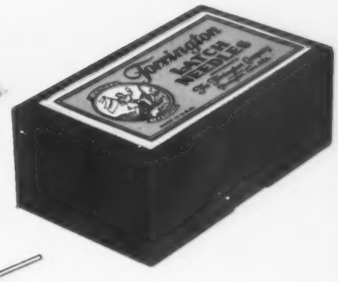
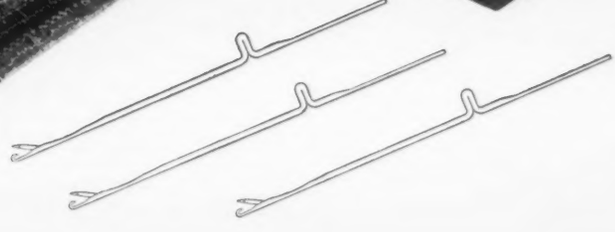
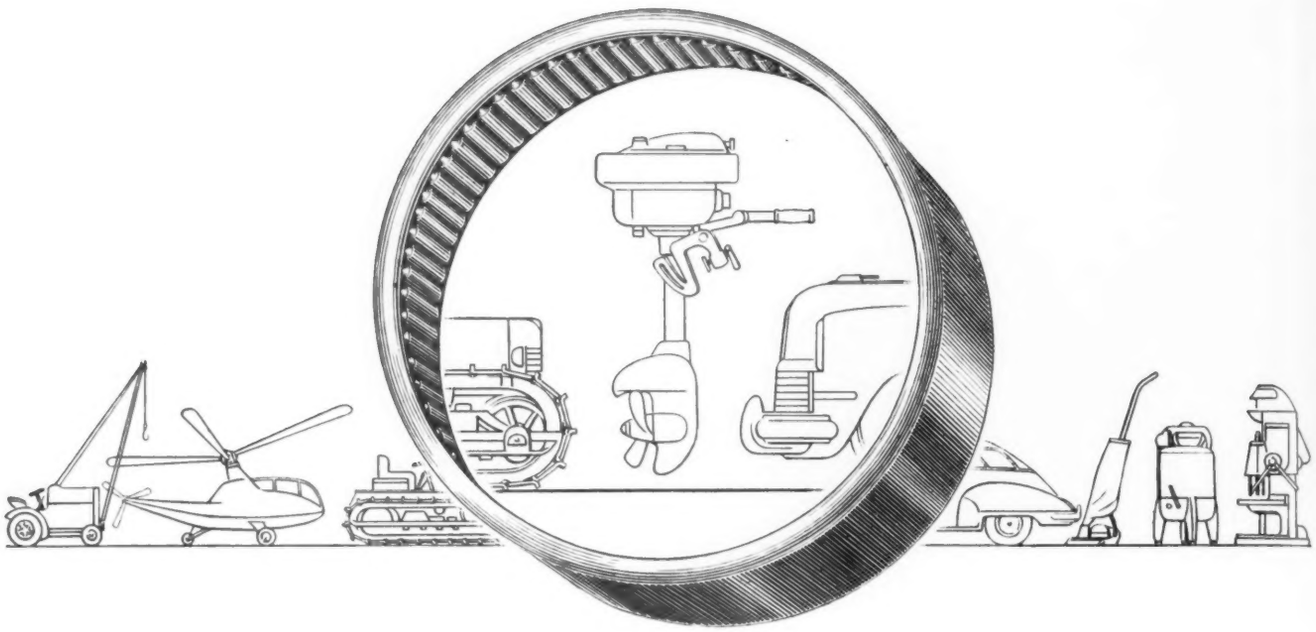
TORRINGTON *Latch Needles*







Here is another way to make your product stand out!

Yes, many diversified products stand out among their types—in terms of compact design, operating efficiency, maintenance economy and service life—through the use of Torrington Needle Bearings.

For these compact units allow *sturdier* construction with *simpler* housings... assure *maximum* efficiency of operation with *minimum* attention...pack a *higher* capacity into a *smaller* relative O.D.... provide *valuable* anti-friction operation at *low* initial cost.

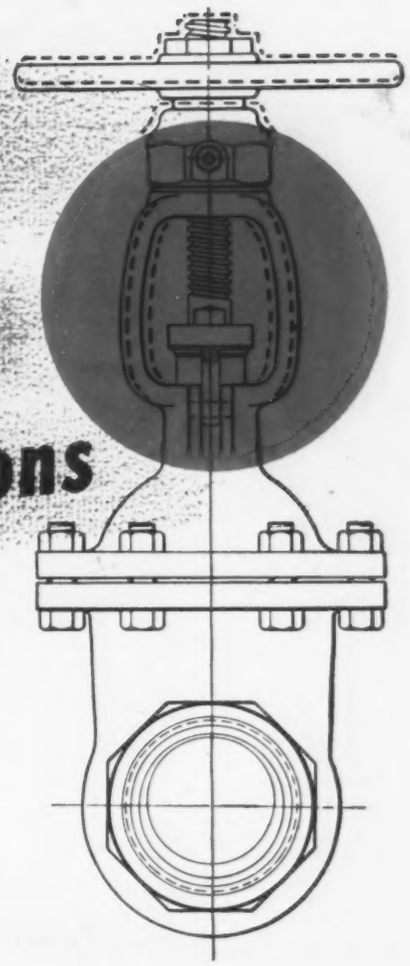
If your problem is one of making your product *stand out* with little change in design and minimum re-tooling, or securing the advantages of anti-friction operation with lower costs all along the line, write for our latest Needle Bearing Catalog No. 32. Our engineering department will welcome the privilege of working with you in the layout or application of any problem regarding the use of Needle Bearings in *your* product.

THE TORRINGTON COMPANY
TORRINGTON, CONN. SOUTH BEND 21, IND.
Offices in All Principal Cities

TORRINGTON NEEDLE BEARINGS

Cooper STAINLESS STEEL VALVES

"Breathe Easy" Under Critical Conditions



Regardless of temperature extremes and operating conditions, Cooper Stainless Steel Valves literally "breathe easy". Specially designed breathing bonnets in each valve compensate for expansion and contraction. The resilient action of these bonnets prevents valve jamming, damage to stem and operating nut threads and assures easy opening and maximum safety in every application.

Another outstanding feature of Cooper Stainless Steel Valves is individual certification. This means that you can now be certain that the composition of your valves meets your exact specifications. In production, Cooper registers the analysis of each heat and stamps each casting with its heat number. Positive identification of every valve and precise duplication of analysis for re-orders are thereby made possible.

Since 1921, The Cooper Alloy Foundry Co. has specialized in the production of stainless steel valves and fittings, and stainless steel castings. Our completely modern facilities—advanced design, engineering and production techniques—years of practical experience in servicing every type of industry are your guarantee of profit-proved performance with every Cooper product. For more complete information, write to us today. If you have a specific valve problem, one of our engineers will gladly discuss it with you. No obligation of course.

CA-109

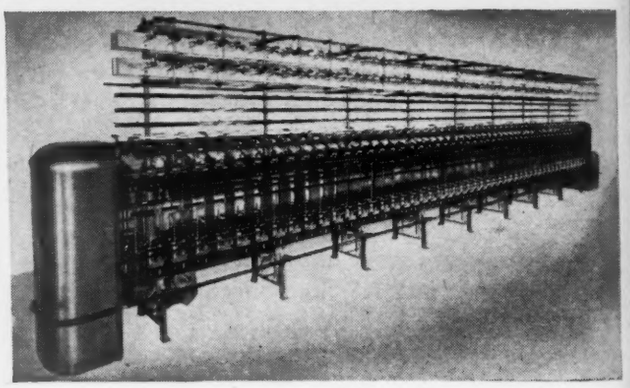
THE COOPER ALLOY FOUNDRY CO.
215 Bloy Street
Hillside, New Jersey

THE ONLY ALLOY FOUNDRY WITH ALL THESE FACILITIES

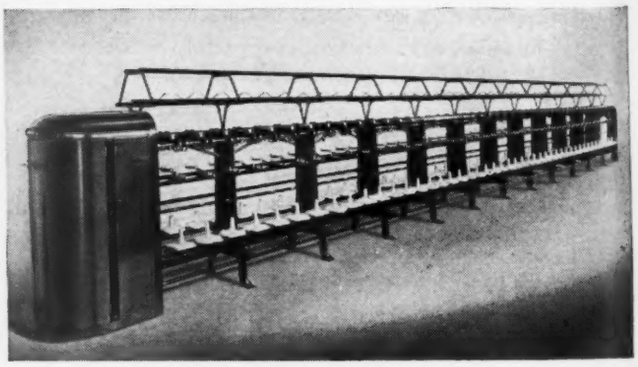
- Laboratory control over raw materials and finished products.
- Dual foundry . . . both hand and machine molding.
- Electric arc and high-frequency-induction melting furnaces.
- Centrifugally-cast castings.
- Heat treating of castings up to six feet.
- X-ray and Gamma-ray inspection.
- Zyglo detection of surface imperfections.
- Precision Castings.
- Machine shop . . . specially equipped for finishing stainless steel.
- Improved cleaning . . . including Lustracast electrolytic finishing which leaves all surfaces bright.
- Castings furnished rough, polished or fully machined . . . one ounce to two tons.
- Development of special alloys to meet unusual requirements.
- Technical consulting service.

THE *Cooper* ALLOY FOUNDRY CO.
STAINLESS STEEL VALVES

THESE MACHINES ARE DESIGNED TO SPEED



The New *Atwood Model 10 Ring Twister is known for high production, too. High spindle speeds, a stop motion that automatically eliminates yarn with a ply missing, full length spindle separators and reduced power requirements are a few of its features.*



The new variable-speed main drive of the Atwood Model 200 Redraw is a big help in raising production. With this drive you can change rate of production, in a matter of seconds, from 150 to 350 yards per minute.

UP

YOUR TWISTING AND WINDING OPERATIONS

Take the Atwood Model 110 Up-Twister for example:

1. Spindle speeds are high, ranging from 6,500 to 10,500 RPM, depending upon the turns of twist per inch, and the type, size and weight of package.

2. If there is trouble at any one spindle, that one may be stopped without affecting the others as each spindle is individually driven by contact with the single belt drive.

3. Single belt drive provides uniformity of spindle speed throughout the length of the machine.

But high speed does not mean any sacrifice in quality. In fact, this machine has a number of features which *improve* quality of production. One is the bobbin hanger, that takes the place of the conventional finger. Use of the bobbin hanger results in better-built packages and more accurately controlled thread lay, assuring less burnt yarn, less hard twist, fewer broken filaments, and more uniform conditioning.

There are many other features of the Atwood Model 110 Up-Twister that improve quality of production and guarantee long machine life.

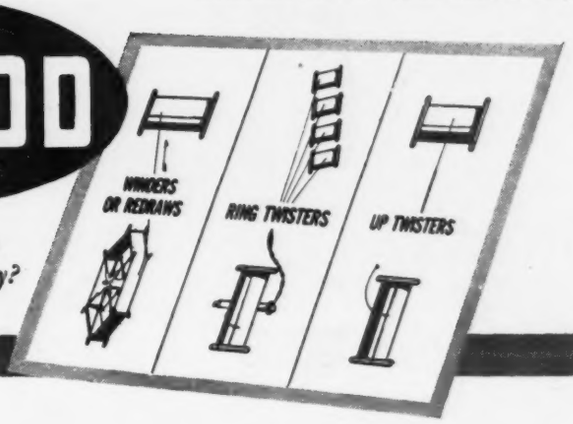
Write for complete details. Ask also for the latest publications describing the *New* Atwood Model 10 Ring Twister and the Model 200 Redraw.

AD–6

ATWOOD DIVISION
FARREL-BIRMINGHAM COMPANY, INC.
STONINGTON, CONNECTICUT, U.S.A.

ATWOOD
SINCE 1852

What's new in yarn machinery?



Whatever the job calls for

. . . it's in the Crane line

Take this filter installation for example . . . or any piping job. What a difference it makes when you can specify all the piping materials from one line. And when just one order gets you all the valves and fittings, pipe, accessories, and fabricated piping.

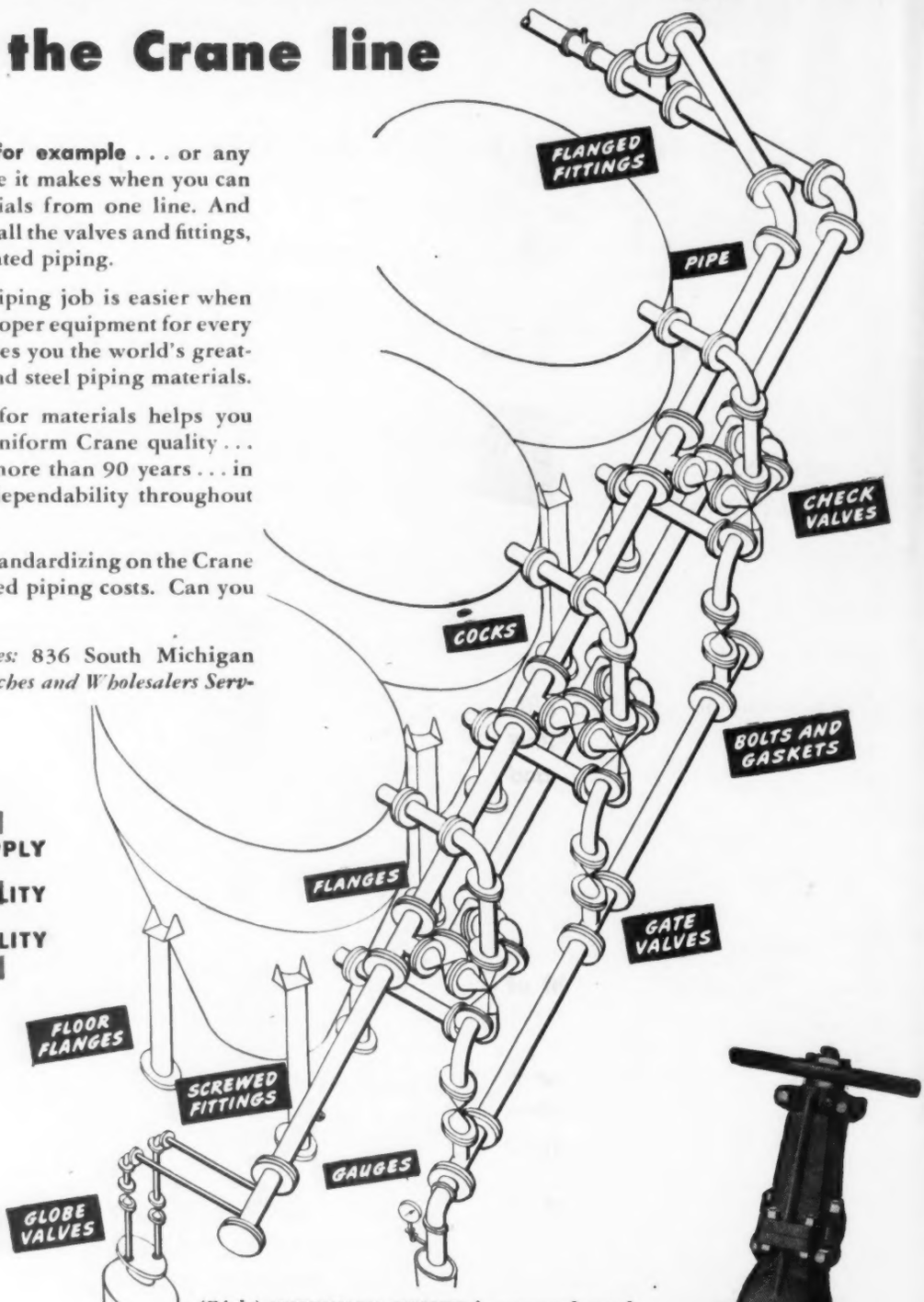
From start to finish, any piping job is easier when Crane is your partner. The proper equipment for every service is assured. Crane gives you the world's greatest selection of brass, iron, and steel piping materials.

Undivided responsibility for materials helps you get the best installations. Uniform Crane quality . . . the standard of quality for more than 90 years . . . in every part means uniform dependability throughout piping systems.

This 3-way advantage of standardizing on the Crane line is the sure way to reduced piping costs. Can you afford to overlook it?

CRANE CO., *General Offices:* 836 South Michigan Avenue, Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas.*

ONE
SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



(*Right*) **UNCOMMON QUALITY** *in commonly used valves—Crane Standard Iron Body Wedge Gate Valves. Improved body design reduces weight yet increases strength. Straight-through ports assure streamlined flow. Every detail developed to give dependable, durable service. For steam pressures up to 125 pounds; 200 pounds cold. Patterns for every need. See Crane Catalog, page 101.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
HEATING • PUMPS

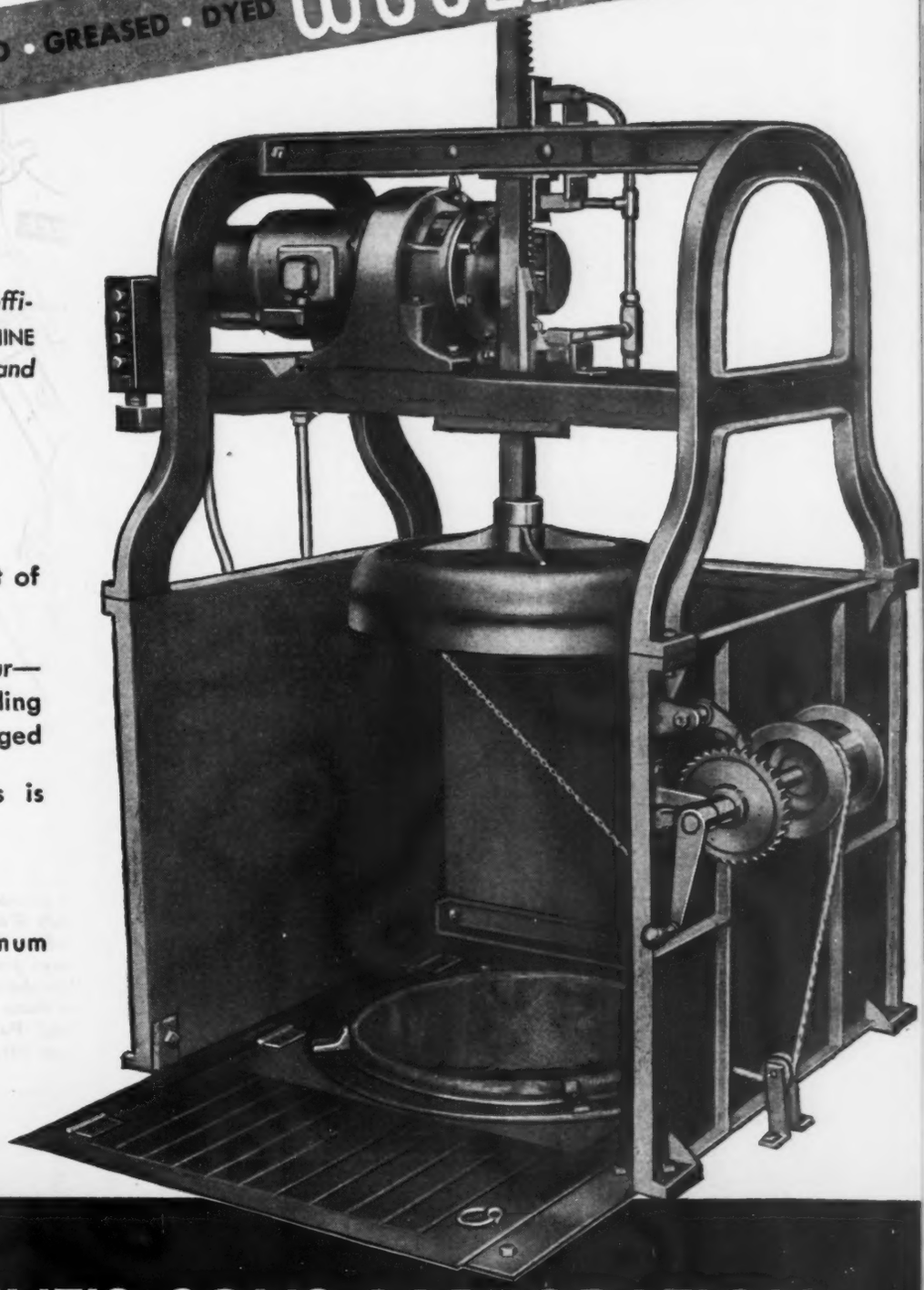
CRANE

FOR EVERY PIPING SYSTEM

FAST ONE-MAN OPERATION

SARGENT'S Automatic BAGGING MACHINE

FOR SCOURED • PULLED • GREASED • DYED WOOLS NOILS • WASTE



Compact, fully automatic, of proven efficiency, the SARGENT BAGGING MACHINE *offers these advantages to the mill and warehouse owner:*

- One-man operation throughout
- Finger-tip control at all times
- Insures uniform bulk and weight of all bags packed
- Handles up to 10 bags per hour—100 to 150 lbs. per bag depending upon the wool or material bagged
- The Sargent bagging process is safe as well as rapid
- Requires little floor space
- Constructed to require minimum maintenance

Write us for complete details

C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U.S.A.

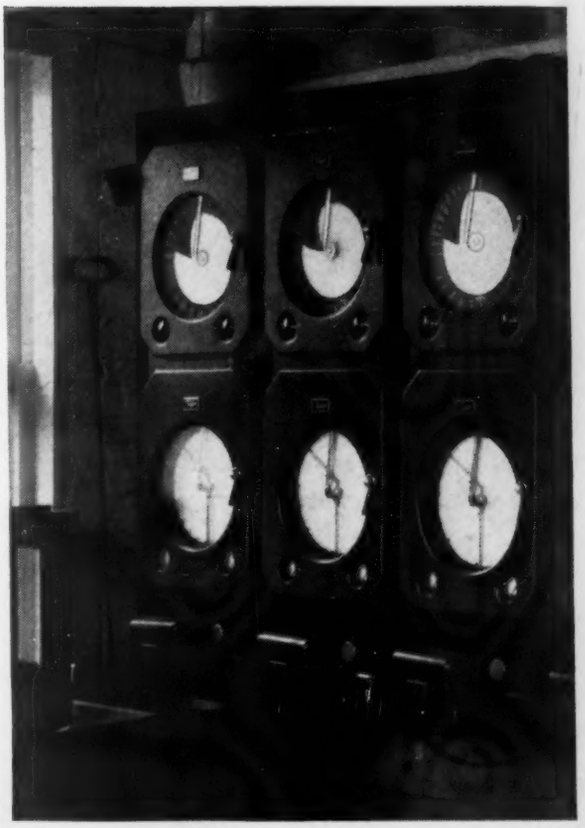
BOSS DYER RUNS

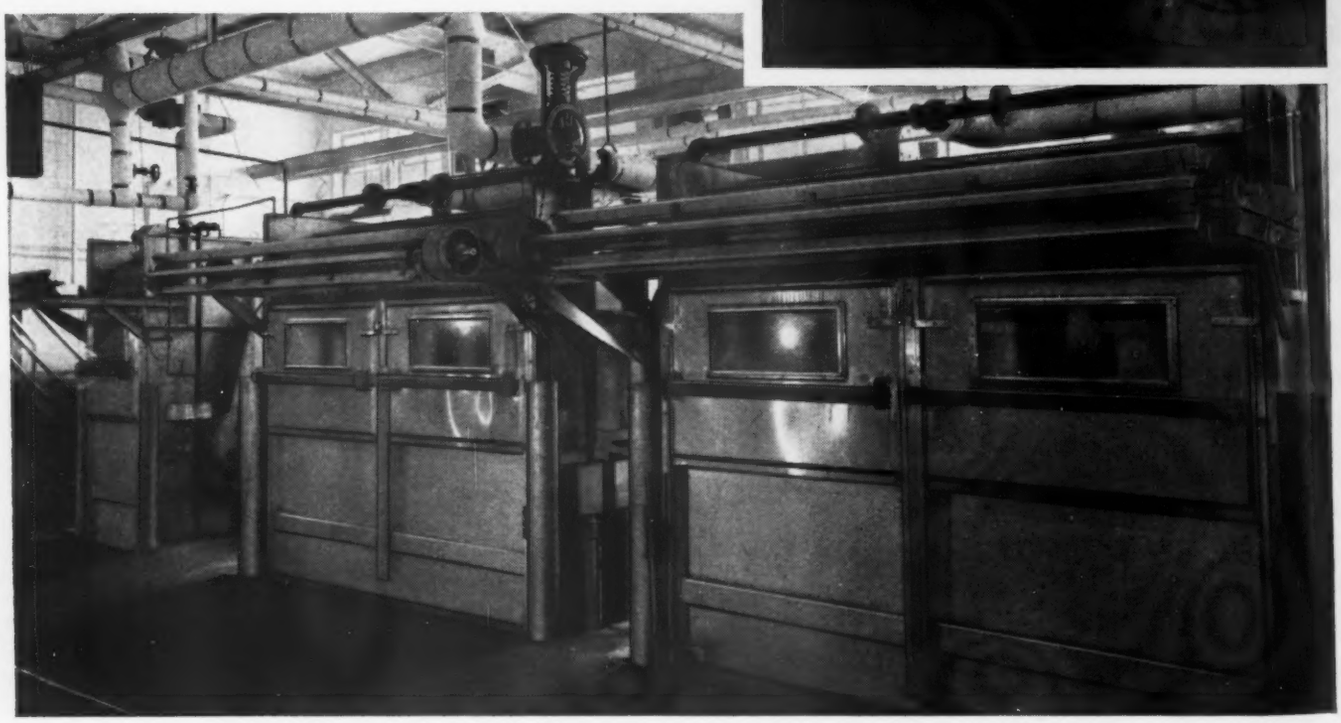
without

THIS battery of Taylor Fulscope Time Schedule Temperature Controllers is located right in the boss dyer's office at the Gonic Manufacturing Company, Gonic, N. H. These Fulscopes *automatically* control time and temperature on eight Riggs & Lombard dye machines. The boss dyer can keep the entire piece dyeing operation right under his thumb —and get precisely the same results time after time.

When the operator signals that kettles are loaded, the boss dyer simply presses a button and leaves the rest to Taylor Accuracy. If he should want an add period, all he does is press the button again.

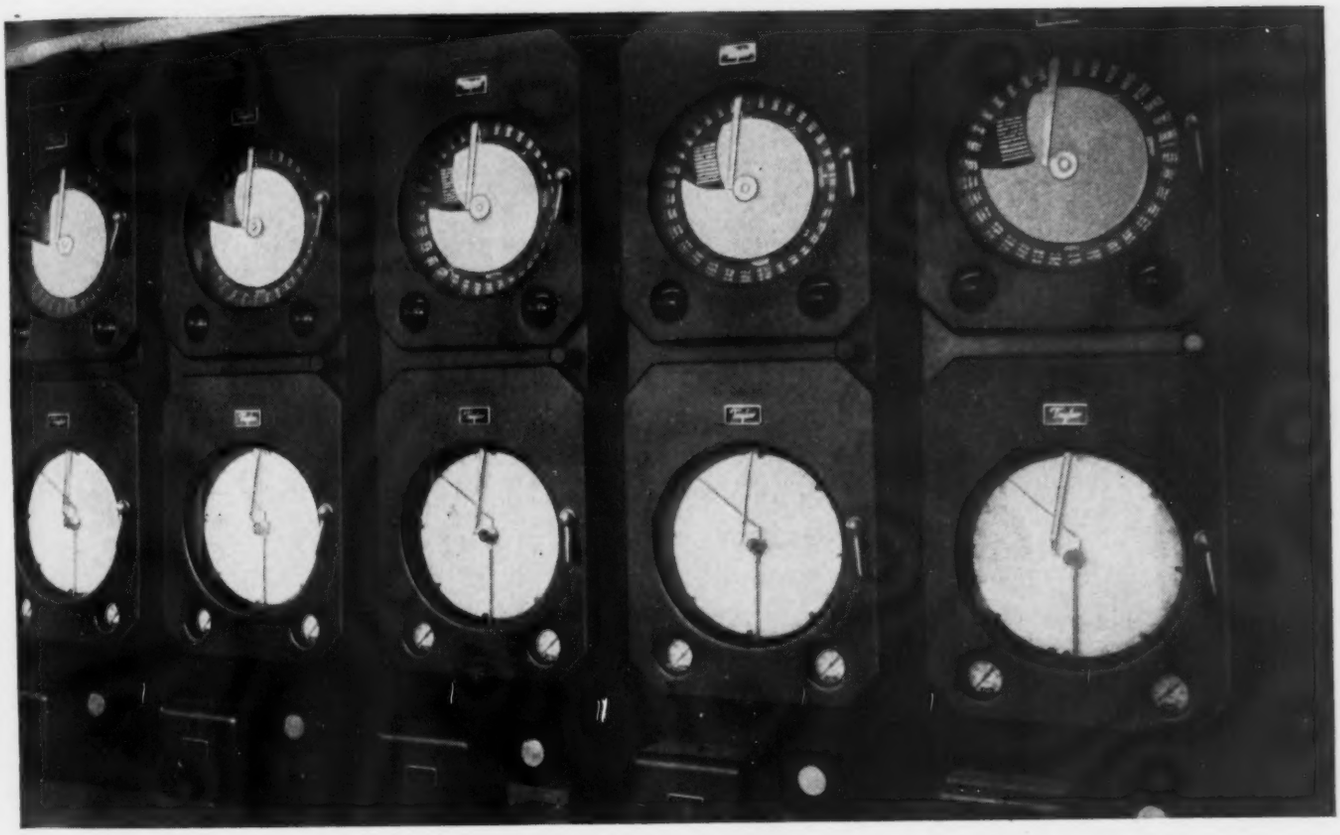
Temperature is controlled to a degree not previously thought possible on this type of machine, and timing is equally precise. You can change the timing with the same cam merely by speeding up or slowing down the cam movement.





PIECE DYEING JOB

leaving his office!



TAYLOR Time Schedule Controllers will save you money by giving you more uniform shades, and more economical use of dyestuff. They save labor by doing the job better than any man could and by releasing operators for other duties.

This flexible, automatic control system is only one of many Taylor control aids that can improve production for you. Call your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow and liquid level.*

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

HERE'S *Wool* THAT WON'T SHRINK

Sports ensemble from Korday Sportswear, Inc.
Fabric by Princeton Knitting Mills

Lucky lamb! His coat never gets too small, no matter how often it is washed. Mother Nature sees to that.

Lucky girl! She's wearing a woolen sports ensemble which can also be washed over and over again without shrinking out of size and shape. LANASET* Resin sees to that. It stabilizes the fibers and guards the natural beauty, texture, absorbency and other desirable characteristics of wool.

And LANASET Resin has scored another *first*. Right now there are available, for consumer markets, substantial quantities of shrinkage-controlled knitted wool merchandise. Leading department stores throughout the country are offering LANASET Resin-treated garments made of Princeton Knitting Mills fabric for fall and winter selling.

The advantage of washability will assure bigger sales and more satisfied customers for *your* wool merchandise. Our technical staff is available to help in planning new woolens for best results in coordinating fabric and finish. Our Textile Finishing Bulletin No. 112, "Wool Shrinkage Control with LANASET Resin", is also available on request.

•

AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
SOUND BROOK, NEW JERSEY
New York • Boston • Philadelphia • Providence
Charlotte • Chicago

LANASET RESIN • SHEERSET† RESIN*
AEROTEX† SOFTENER H • LACET† RESIN

other melamine resins for textile finishes

Sheerset† RESIN

SHEERSET† RESIN—Combination of resins based on melamine which may be applied to cotton, rayon and acetate sheer woven fabrics, and mixtures as a wash resistant, crisp, resilient finish. Fabrics so treated will hold their shape with a minimum of distortion and maintain their hand under conditions of high humidity, heat and other adverse conditions to which apparel is subjected.

LACET† RESIN—Combination of resins based on a melamine type which may be applied to cotton or rayon Nottingham lace curtains as a durable stiffener. At the same time the finish controls stretching (sagging) and shrinking. Where unusual fastness to light is desired, pigments may be used to produce the desired effect. This finish contributes to soil resistance and eliminates the need of framing and ironing after laundering. When chlorine is used in the washing process, it is essential that the standard practice be observed and an antichlor used.

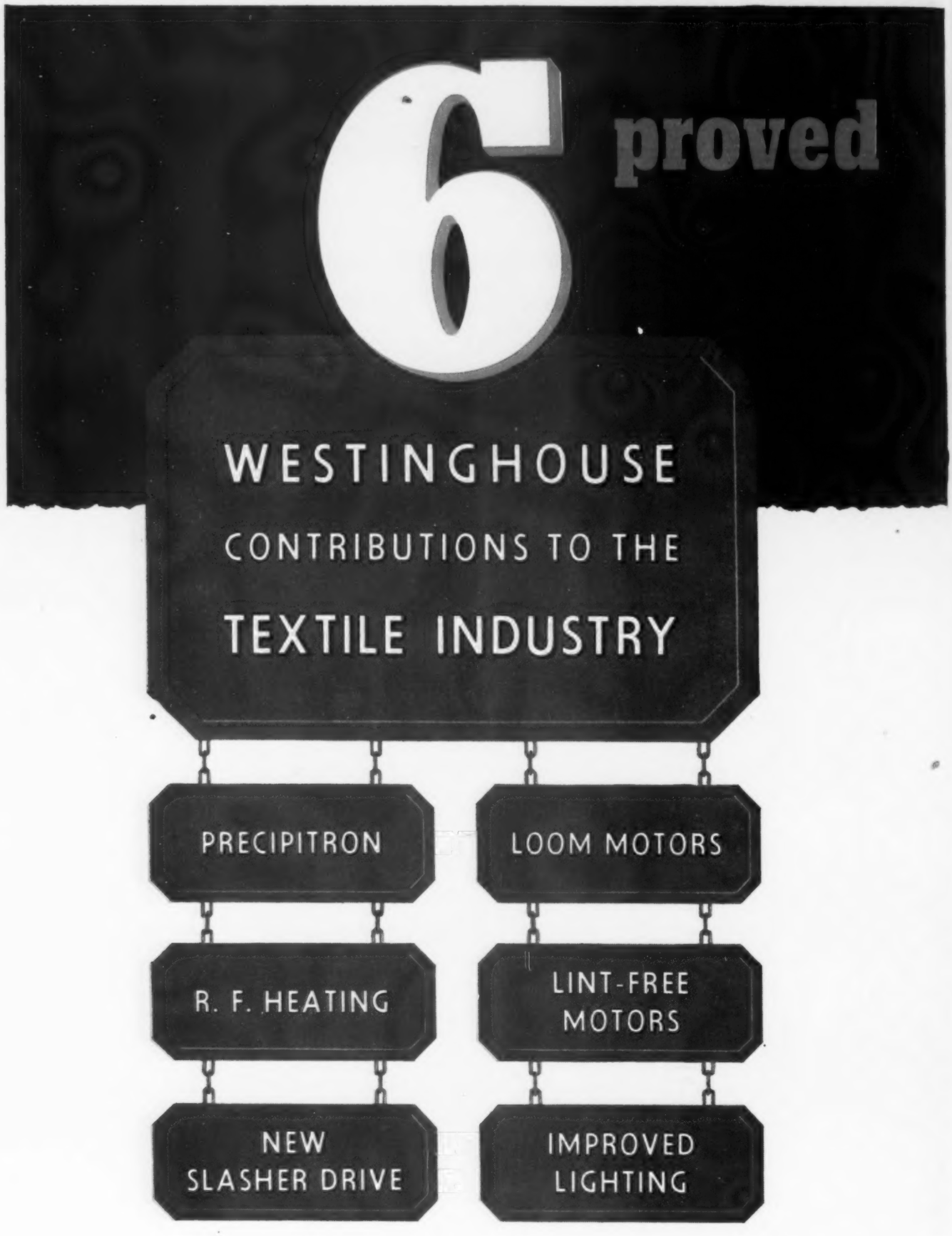
Lacet† RESIN

aerotex† softener H

AEROTEX† SOFTENER H—A durable synthetic type softener especially suited for use in conjunction with many of the synthetic type resins because of its compatibility. AEROTEX SOFTENER H produces a finish of superior smoothness and suppleness of handle, being equally efficient on wool and wool mixtures, cotton or synthetic fibers. It serves as a wetting agent and does not discolor or interfere with crease-resistant properties. It may be applied at any stage during the wet processing of the goods.

*Reg. U. S. Pat. Off.

†Trade-mark of American Cyanamid Company



Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

ways

TO STEP UP PRODUCTION AND QUALITY ..REDUCE COSTS

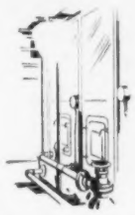
A sure approach to higher economy—and profits—in textile operations is to apply in your mill these six Westinghouse pioneering contributions to the textile industry.

Each has been developed with the help of the textile industry to meet your particular requirements. From its beginning, Westinghouse has identified itself with progress in the textile industry. More than half a century of Westinghouse textile experience is behind each development.

From the new multi-motor slasher drive, which gives precision control of tension, diameter, spacing—to *Precipitron, the electronic air cleaner—Westinghouse offers related equipment to step up production through better, uniform quality, healthier working conditions . . . with lower maintenance per dollar invested.

For information, call your Westinghouse office—or write for booklet indicated, to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-94721

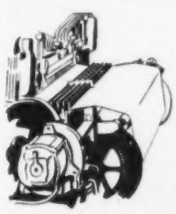
*Trade-Mark Registered



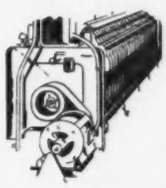
Precipitron — Keeps air clean and healthy—no "mill room fever"—picks out air-borne particles as small as 1/250,000 inch—eliminates dust, lint, soot, fumes, oil mist and smoke. Increases top-grade production—lowers machine maintenance and cleaning—saves more man-hours for productive activity. For further information, write for B-3629.

Radio Frequency Heating — Produces uniform "dielectric" heating—cuts twist-setting and drying time, cake drying and dye package drying to a fraction of that required by conventional methods—without injury to finish or structural quality. Reduces amount of work in process—reduces space required for dryers. For further information, write for B-3551.

Loom Motors—Quiet, cool, smooth-running motors that cut down radiation heating of your weave rooms—especially designed for peak output from modern loom operation—with extra capacity to break in new looms. Sealed sleeve bearings assure no oil-starved or over-oiled bearings—floor or 3-point mounting—plus 62 other variations for any type of loom. For further information, write for B-3778.



Lint-Free Motors—Called the "cleanest running motor for textile service"—keeps its insides free of lint because it has *smooth* contours in the path of air circulation in the motor. Sealed ball bearings have run for *seven* years without lubrication—the last word in efficiency, safety, low maintenance. For further information, write for B-3515.



Multi-Motor Slasher Drive — The first major improvement in slasher drives for several decades. Has the famous Rototrol built into the system to guarantee uniform tension control. Provides uniform yarn tension—diameter—beam density—better filler yarn spacing—less yarn breakage—more warp on beam—fewer stops and adjustments. For further information, write for B-3491.

Improved "See-Ability"—For mill, weave and inspection rooms—means the properly selected fixtures—fluorescent and incandescent—properly placed for minimum glare, shadows, to increase production, reduce spoilage, prevent serious accidents—again the result of a comprehensive study made by Westinghouse of textile mill requirements. For further information, write for B-3312.

Operating Partner of the Textile Industry

FOR MODERN ACCURATE SALT MEASUREMENT YOU "PASS the SALT" by LIXATOR

Measurement of salt by dry volume in shovels, pails or containers is *hit-or-miss* . . .

Measurement of salt by weight without regard to water absorbed during damp weather and long storage is *hit-or-miss!*

But measurement by saturated-brine volume is accurate . . . *because* each gallon of 100% saturated brine always contains 2.65 pounds of salt. The Lixate Rock Salt Dissolver always produces 100% saturated, crystal-clear brine, and eliminates inaccurate measurement by dry volume or weight.

Brine-strength control is sure when you start with 100% saturated brine from a Lixator. A definite volume of Lixate brine supplies a definite quantity of salt, and dilution to any desired degree is easy and accurate. The use of too much or too little salt as an exhausting agent is avoided. The exactly correct amount of salt needed can be most easily measured in the form of saturated brine eliminating uneven dyeing, spotty goods and white edges.

And remember, your Lixator also supplies crystal-clear, 100% saturated brine for zeolite water softeners.

Textile dyers everywhere report Lixate brine gives them more level dyeing, greater efficiency, and thoroughly accurate salt measurement.

JUST MAIL THIS COUPON

Get the whole story in our free booklet: "How Lixate Brine Solves the Problem of Accurate Salt Measurement."

*Name*_____

*Firm*_____

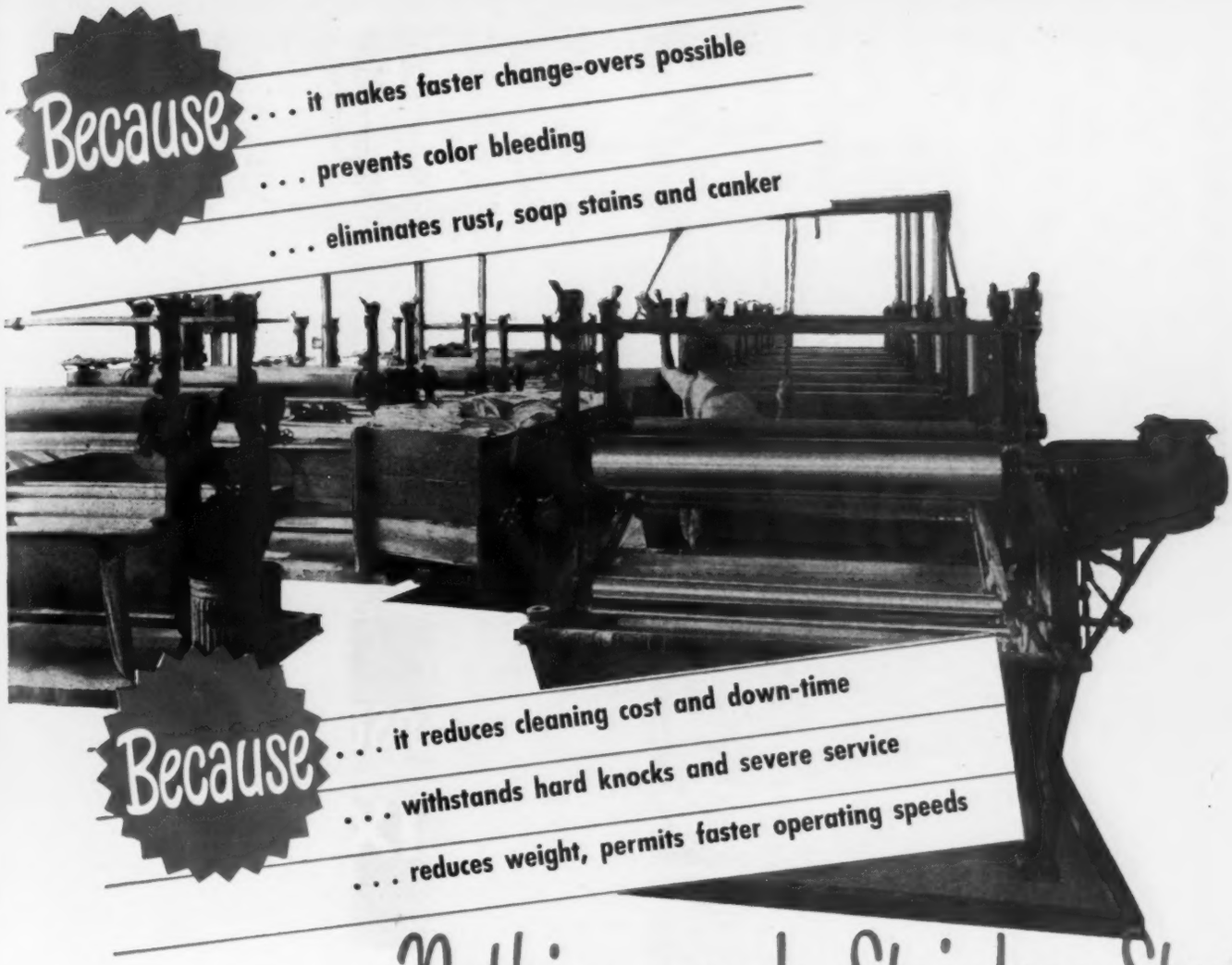
*Street*_____

*City*_____ *State*_____

The LIXATE *Process*
FOR MAKING BRINE

★ ★ ★

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.


Because
. . . it makes faster change-overs possible
. . . prevents color bleeding
. . . eliminates rust, soap stains and canker
Because
. . . it reduces cleaning cost and down-time
. . . withstands hard knocks and severe service
. . . reduces weight, permits faster operating speeds

Nothing equals Stainless Steel

ESPECIALLY IF IT'S U·S·S STAINLESS

It seems unnecessary to remind dyers and finishers of these money-saving benefits of Stainless Steel.

For many years now, you've watched Stainless Steel take on one job after another—and do it better than any other material. In dyeing and finishing equipment you've seen Stainless stand up long after other equipment has worn out. You've seen it more than pay for itself in brighter, truer colors, in higher quality all-round, in very low maintenance costs.

Particularly is this true when U·S·S Stainless Steel is used. That is why so many leading makers of textile mill machinery have for years preferred U·S·S Stainless.

They use U·S·S Stainless because in this perfected, time-tested steel they are sure of obtaining all the superior properties of Stainless Steel at their *best*. Consistently uniform, of fine finish, excellent in fabricating qualities, U·S·S Stainless responds readily and uniformly to the most advanced manufacturing techniques . . . insures the finest results in service.

So, if you want top performance from your equipment, make sure you get U·S·S Stainless. Specify it by name. Just add *"U·S·S Stainless preferred"* on your next equipment order. U·S·S Stainless Steel does not cost any more than other stainless steels, but it will make a difference.

U·S·S STAINLESS STEEL

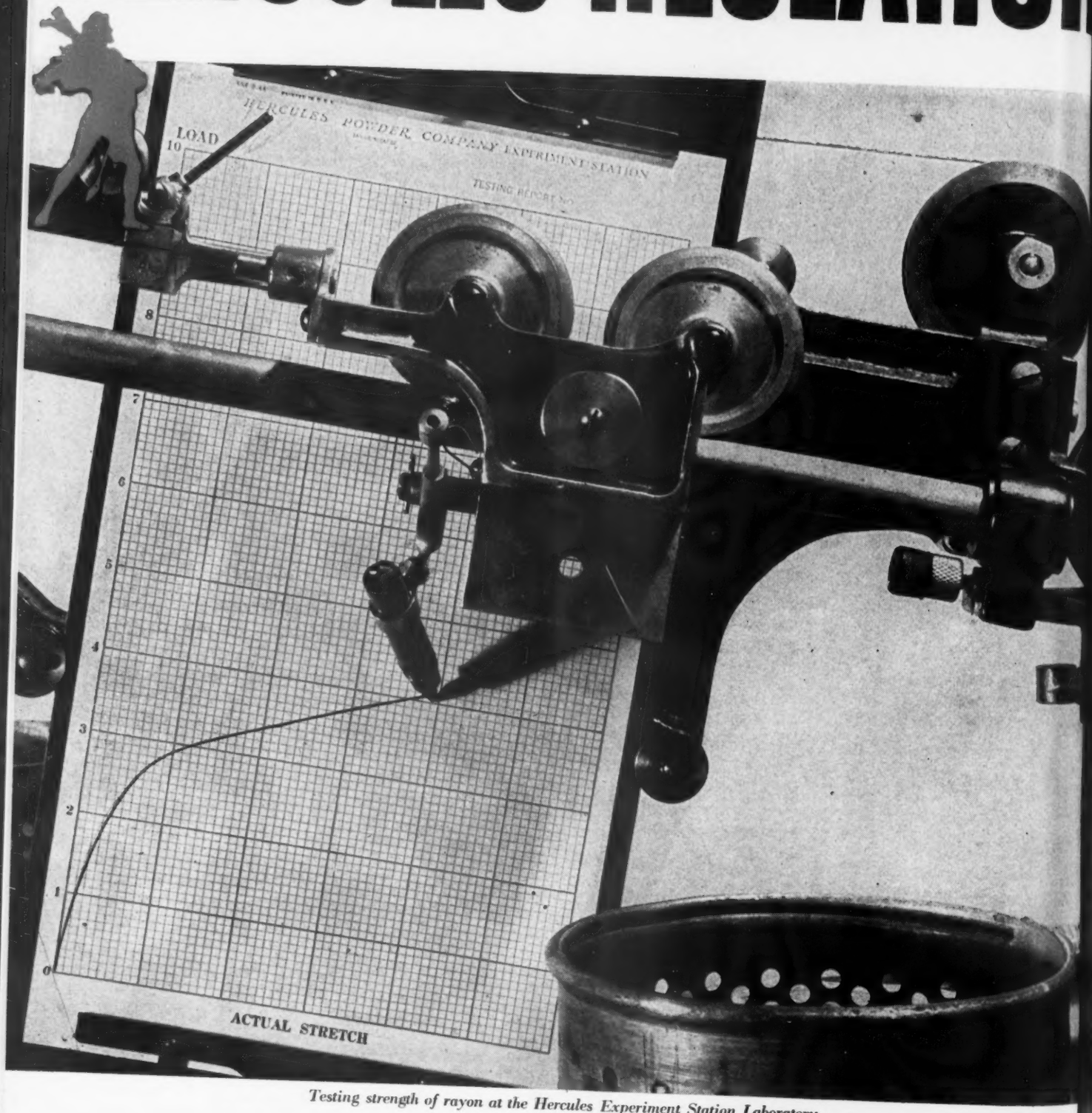
SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

USS STAINLESS STEEL UNITED STATES STEEL

UNITED STATES STEEL

HERCULES RESEARCH



Testing strength of rayon at the Hercules Experiment Station Laboratory

IT PAYS TO KNOW *MORE* ABOUT

HERCULES

HELPS FROM RUGS TO RIBBONS

Hercules research has developed chemical materials that are used increasingly in the manufacture of every type of textile product—ranging from the sheerest dresses to the thickest carpeting.

For example, many varieties of thick or heavy-pile textile products can be made to wear longer, because of Hercules research in processing and finishing materials. Flexalyn*, for instance, is used as a binder for corn and other starches for back-sizing carpets. It provides mixes that have increased flexibility and body and are less sensitive to moisture and deterioration on aging.

Constant research has improved the quality of Hercules Cellulose Acetate to the point where it is now available in all useful ranges of acetyl contents and viscosities, thus meeting every need in the manufacture of acetate rayons. Research has also improved Hercules Chemical Cotton, so that today it makes possible the sheerest fabrics as well as tougher high-tenacity viscose rayon for industrial uses.

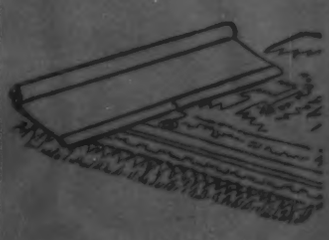
For details on Hercules chemical materials for the textile industry, or for information on how Hercules can complement your research, mail the coupon at right.

*Reg. U. S. Pat. Off. by Hercules Powder Company

Hercules chemical materials for the textile industry include:

B-3 Reagent...
Used as a delustering agent in the processing of rayon, both in manufacturing and finishing operations.

Clorafin*...
Hercules low-cost chlorinated paraffin for flame- and water-resistant coatings for canvas and other textiles.



Flexalyn*...
An economical binder for corn and other starches for back-sizing carpets, tag cloth filling, window shades.

Pine Oil...
Yarmor* 302-W pine oil is a low-cost wetting agent and penetrant used in wet processing all textile fibers.

Terpesol* 8...
One of a series of solvents and plasticizers for textile chemicals. An excellent dispersant for pigments.

Nitrocellulose...
Hercules nitrocellulose and ethyl cellulose are the basis for rapid drying, durable, brilliant textile coatings.

FOR FURTHER DETAILS

CHEMICAL MATERIALS FOR THE TEXTILE INDUSTRY

HERCULES POWDER COMPANY
INCORPORATED
944 Market Street, Wilmington 99, Delaware

Please send information on_____

_____

*Name*_____

*Title*_____

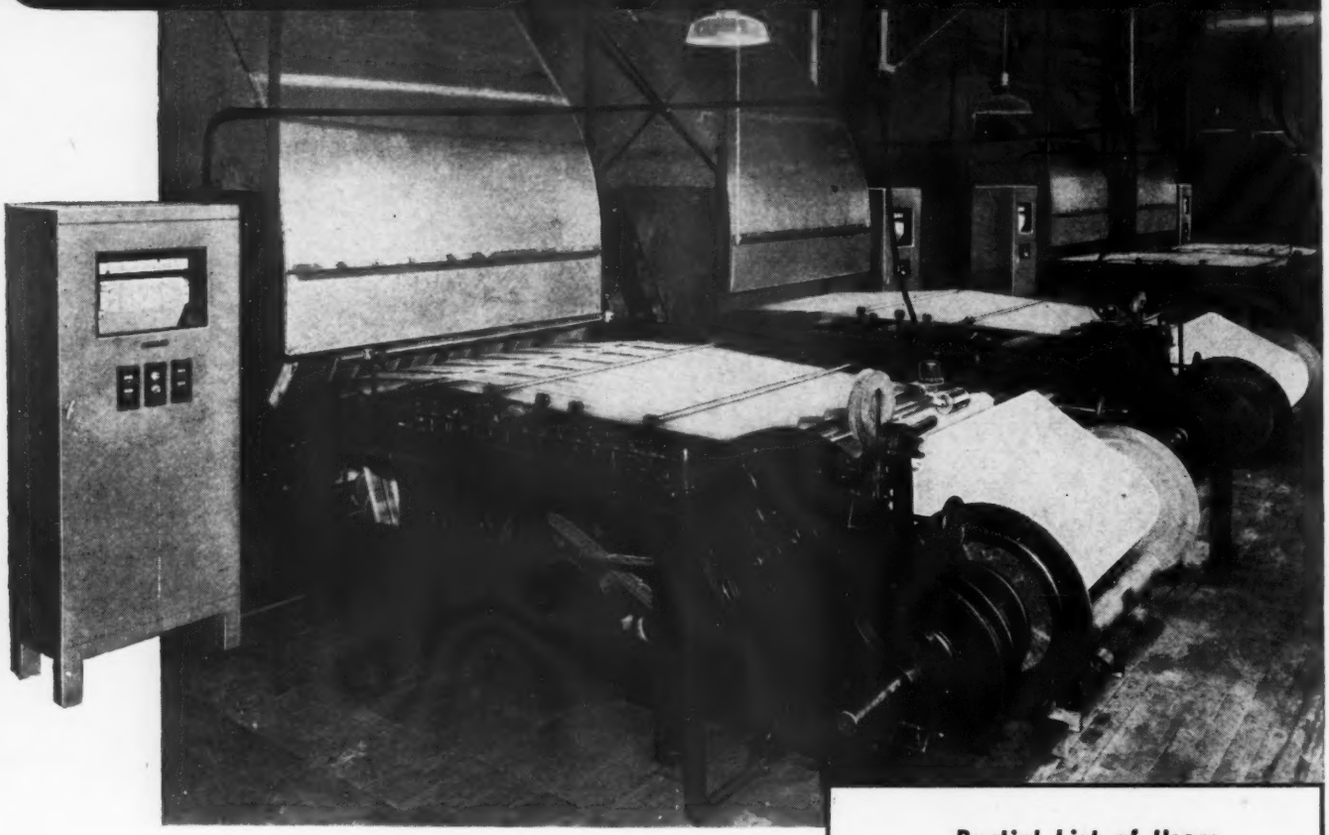
*Company*_____

*Street*_____

*City*_____ *Zone*_____ *State*_____

T-64

OVER 400 IN USE TODAY



Performance Counts !

On over 400 cotton and rayon slashers throughout the United States and Canada, superior warps are being delivered to the weave room because of the Brown Moist-O-Graph Slasher Control System.

The Moist-O-Graph increases slasher and weave room production. It cuts down broken ends because warps are never too *dry*. It eliminates mildew because warps are never too *wet*.

Consider the number of looms in your mill serviced by one slasher, and you will see the multiplying economies over 400 slashers are *now* giving with the Brown Moist-O-Graph. Write for catalog.

THE BROWN INSTRUMENT COMPANY
A division of Minneapolis-Honeywell Regulator Co.
4509 Wayne Avenue, Philadelphia 44, Pa.

Offices in all principal cities

Toronto, Canada — London, England
Stockholm, Sweden — Amsterdam, Holland

Partial List of Users

American Enka Corporation
Ashland Corporation
Associated Textiles of Canada
Beaumont Mfg. Company
Bemis Bros. Bag Company
Berkshire Fine Spinning Associates
Bibb Mfg. Company
Brookside Mills
Callaway Mills
Canadian Celanese
Classe Ribbon Works, Inc.
Consolidated Textiles, Ltd.
Continental Mills
Courtaulds, Ltd.
Drayton Mills
Esmond Mills
Graniteville Co.
Henderson Cotton Mills
Millville Mfg. Company
North American Rayon Corp.
Pacific Mills
Pepperell Mfg. Company
Riverside & Dan River Cotton Mills, Inc.
Seminole Mills
Springs Cotton Mills
Swift Mfg. Company
West Point Mfg. Company
York Mfg. Company

BROWN MOIST-O-GRAPH

INDANTHRENES

for work clothes

INDANTHRENES

for sport clothes

INDANTHRENES

for couturiers' creations

Indanthrenes enhance the value of every fabric to which they are applied.

GENERAL DYESTUFF CORPORATION

HE WAS SURPRISED WHEN THE ANSWER WAS "NO"

DURING recent months one of our industrial development engineers was in the office of an executive of one of America's large industries which is considering the establishment of a plant in the South. In response to a question concerning the location of this plant our engineer replied to the executive in the negative and gave his reasons for a modified viewpoint. The executive remarked that the reasoning was sound—that he wanted our engineer to work with him further as his plans for a new location developed.

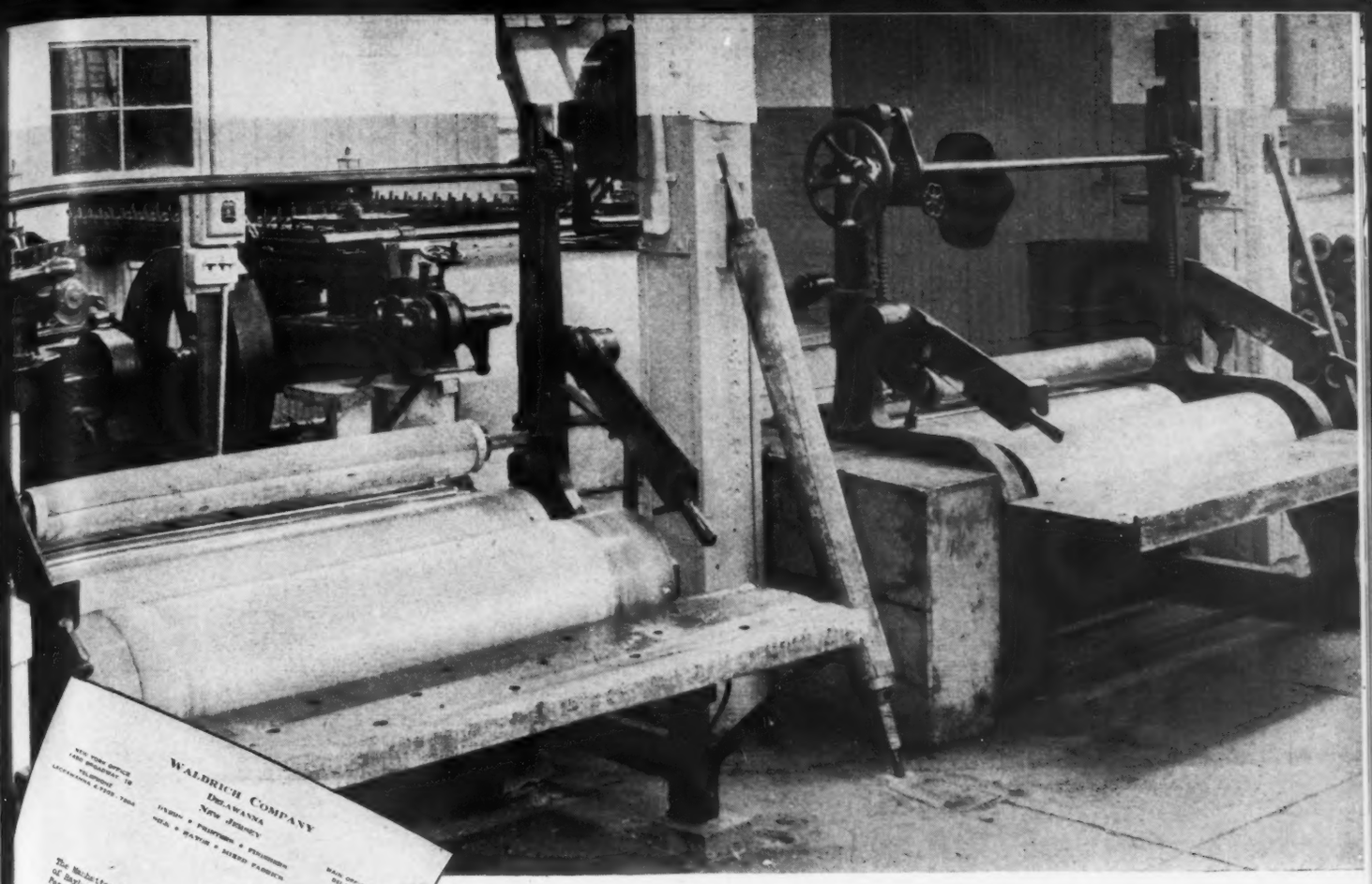
We want industries which locate in Alabama to be successful. Therefore, our industrial development engineers present full and impartial facts about any area or location in which you might be interested. Naturally, they are enthusiastic about Alabama as offering opportunities for industries but they do not permit their enthusiasm to overrun sound business judgment.

When and if you decide to establish a plant in the South they will be glad to assist you in any studies you would like to have made of any locality in our service area.

Industrial Development Department

ALABAMA POWER COMPANY

BIRMINGHAM, ALABAMA



WALBRICH COMPANY
DELAWANNA
New Jersey

May 21, 1945

The Manhattan Rubber Mfg. Division
of Raybestos-Manhattan, Inc.
Passaic, New Jersey

Gentlemen:

Attention: Mr. Brady is ideal

We are pleased to attach photographs of two sets of
batcher rolls, rubber covered by you, which to our knowl-
edge are at least 25 years old, have never been removed
from the machines, and still look good for many more years
to come. We estimate that during this period of time,
five hundred million yards of goods have passed over
these rolls.

Very truly yours,
WALBRICH COMPANY
R. Ritchie
Purchasing Agent

OVER 500,000,000 YARDS
in 25 years over these
MANHATTAN RUBBER COVERED ROLLS

"have never been removed from the machines, and still look good for many more years to come."

Condor PRODUCTS

Cone Belt
Transmission Belt
V-Belt
Agricultural Belting
Air Hose
Acid Hose
Water Hose
Fire Hose
Steam Hose
Suction Hose
Molded Rubber Goods
Oilless Bearings
Hard Rubber Pot Eyes
Rubber Lined Tanks
Rubber Covered Rolls

Abrasive Wheels
Bowling Balls

A quarter century of uninterrupted, trouble-free service and more years to come. Certainly a satisfactory investment. Nor is it unusual for MANHATTAN batching rolls. Other users of these Rubber Covered Rolls keep reporting comparable service records.

As good as were MANHATTAN Textile Rolls a quarter of a century ago, they're better still today. Out of constant research has come FLEXLASTICS with better aging properties, closely controlled and uniform densities in a wider range, to assure you long and profitable service, whether on batchers, scutchers, slashers, padders, mercerizing equipment or other textile machines.

Make your next new rolls or recovering job an investment through the use of FLEXLASTICS.

Roll covering plants at Passaic, N. J.; North Charleston, S. C.; Neenah, Wis.

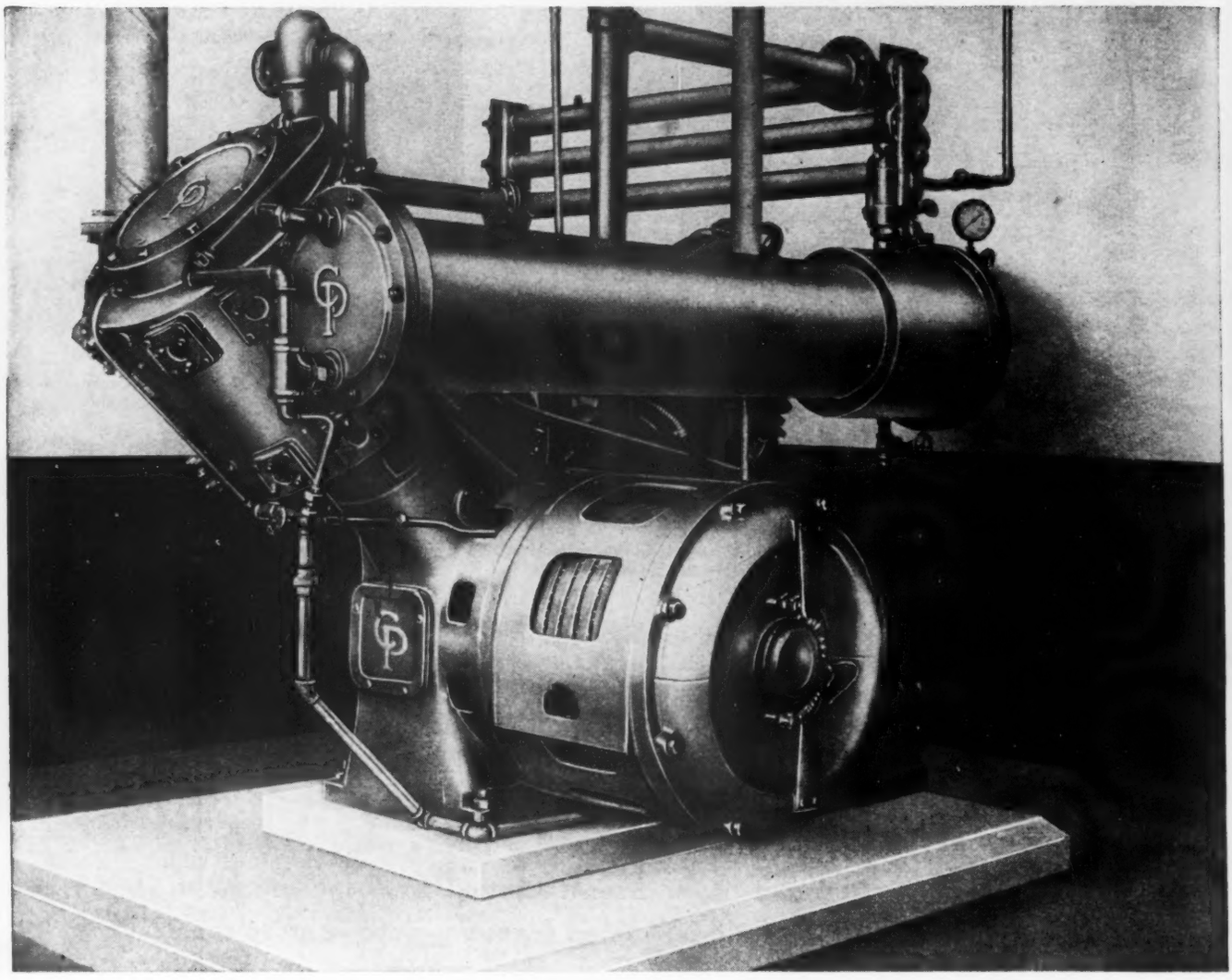
RAYBESTOS R M MANHATTAN

RAYBESTOS-MANHATTAN, INC.

MANHATTAN RUBBER DIVISION

EXECUTIVE OFFICES AND FACTORIES — PASSAIC, NEW JERSEY

WHERE *Compactness* COUNTS!



CP TYPE Y COMPRESSOR IS IDEAL

ALTHOUGH designed for restricted floor space, the CP Type Y Compressor provides high efficiency and low maintenance. Shipped complete as a "package", ready for external connections, it requires only a simple foundation and no special skill in aligning or installing.

Large area Simplate valves, multi-step capacity regulation, effective intercooling, precision bearings, and force-feed lubrication assure its exceptional performance. With built-in or direct-coupled motor, or with V-belt drive, available in capacities of 500 to 900 c.f.m., at 80 to 125 pounds pressure. Sizes for other pressures also furnished. Write for information.

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

Century Splash Proof
Squirrel Cage Motor

Century Splash Proof
Slip Ring Motor

Century Splash Proof Direct
Current Motor

Century Splash Proof Motors

PROTECTED—

FROM A TRICKLE OF LIQUID TO THE FULL FORCE OF A HOSE DURING PLANT WASHDOWN

From a trickle of dripping liquid to the full force of a hose during a plant washdown, Century Splash Proof motors will keep the vital parts of the motor dry — keep them in service longer. They eliminate unnecessary production losses due to dripping or splashing liquid or falling solids which might otherwise damage the vital parts of the motor.

Century Splash Proof motor windings are insulated to resist the damp atmospheres found where splash proof design is recommended. Special insulations are often provided for unusual concentrations of acids and alkali. This gives you additional protection against costly work stoppages.

These motors are ideal for installations on such equipment as pumps, conveyors, agitators, washers, dryers, and many others often encountered in food, chemical, and textile processing. In addition to splash proof designs Century offers a wide range of types and sizes from 1/20 to 600 horsepower.

Specify Century motors on all your electrically powered equipment. They are engineered to the functional characteristics of the machine theydrive to assure top performance.

471

Century C MOTORS

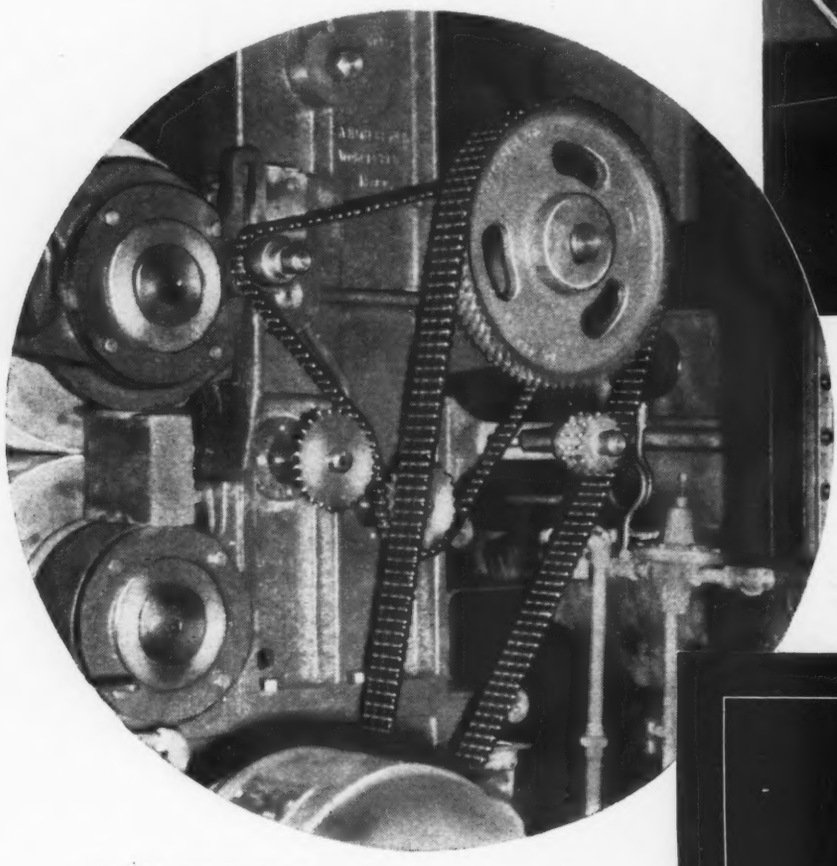
CENTURY ELECTRIC CO. 1806 Pine St., St. Louis 3, Mo.

Offices and Stock Points in Principal Cities

DO YOU KNOW ROLLER CHAIN . . .

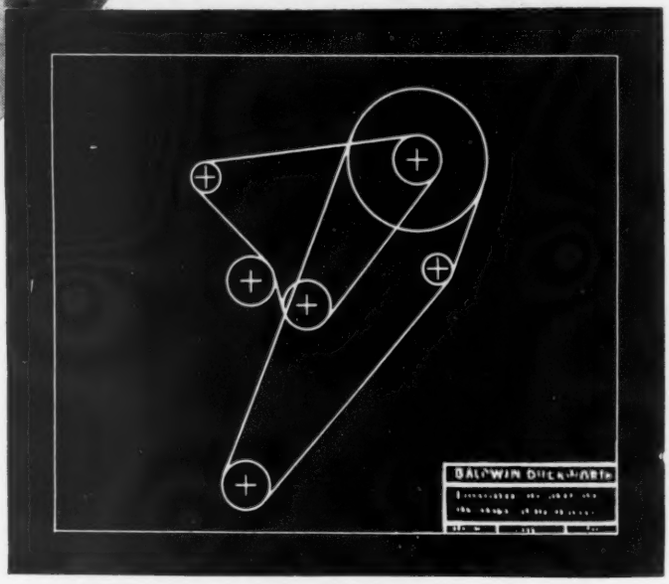
is right for high and low speeds?

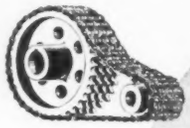
① THE POSITIVE GRIP of roller chains on sprocket teeth permits them to operate with equal efficiency at both high and low speeds . . . without slip or creep!



② THE PRIMARY DRIVE of this hydraulic squeezing machine for textiles employs a triple strand of Baldwin-Rex roller chain that operates at comparatively low speeds. The secondary drive, operating at high speeds, uses a double strand of Baldwin-Rex. The positive action of the chains eliminates the danger of spoiled or unevenly coated material through slippage.

③ ANOTHER FEATURE that makes roller chains the most versatile of all power transmission mediums is its ability to flex in two directions and to drive multiple shafts from a single source of power. Speed changes can be made by merely changing sprocket size. No need for expensive speed-changing equipment.





The Baldwin-Rex Man can assist you in the solution of your specific drive problem. See or write him for complete information or send for catalogs on Baldwin-Rex roller chains.

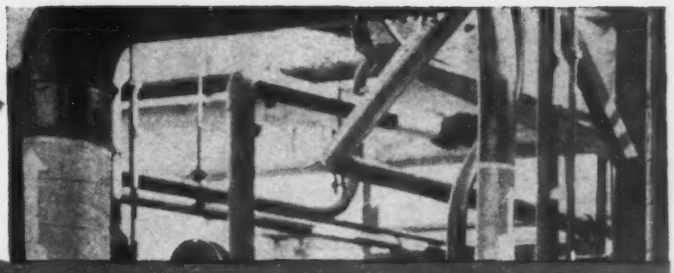
BALDWIN·REX

ROLLER CHAINS

BALDWIN-DUCKWORTH DIVISION OF CHAIN BELT COMPANY

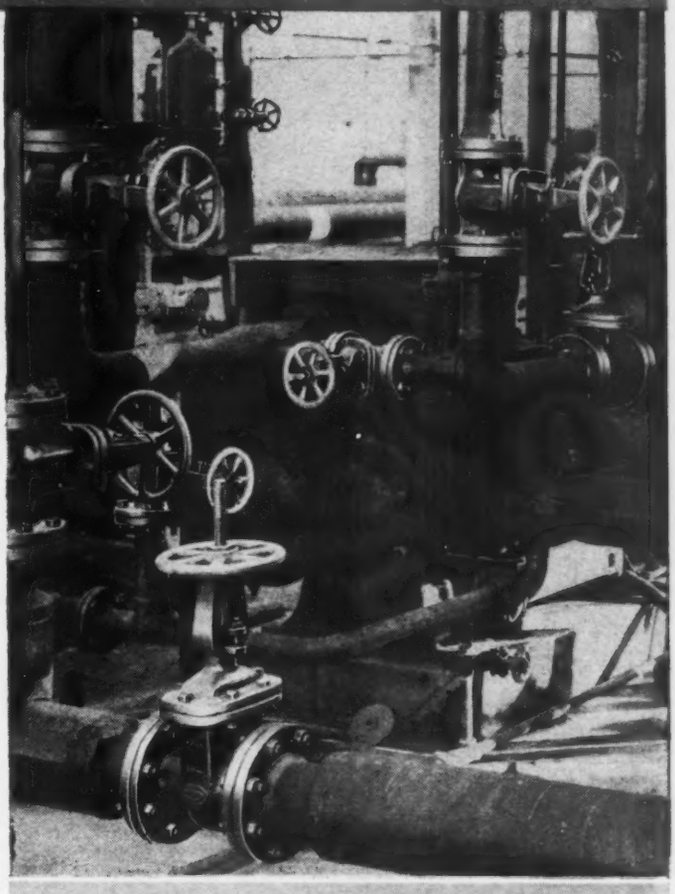
346 Plainfield Street, Springfield 2, Massachusetts

TIGHT VALVES FOR "TIGHT SPOTS"



. . . in the Process Industries

Ordinary valves are in a "tight spot" when they are expected to remain tight in a corrosive fluid pipeline. But Aloyco Stainless Steel Valves take severe conditions in their stride, functioning perfectly day-in and day-out for extraordinarily long periods. The excellence of Aloyco Valves is the result of our pioneering in the design and manufacture of all-stainless-alloy valves. The peculiar properties of stainless alloys call for great skill in the fabrication of products made from them. Specialization in this field has given us a "know-how" that is indispensable in the production of valves which are exceptionally long-lived and low in maintenance cost. Consult us on your requirements for valves in applications where resistance to corrosion and contamination are essential.



Aloyco-20 Valves circulating 60 to 65% sulphuric acid in large synthetic rubber plant.

Aloyco No. 111 Gate — Leader of corrosion resistant valves

ALOYCO

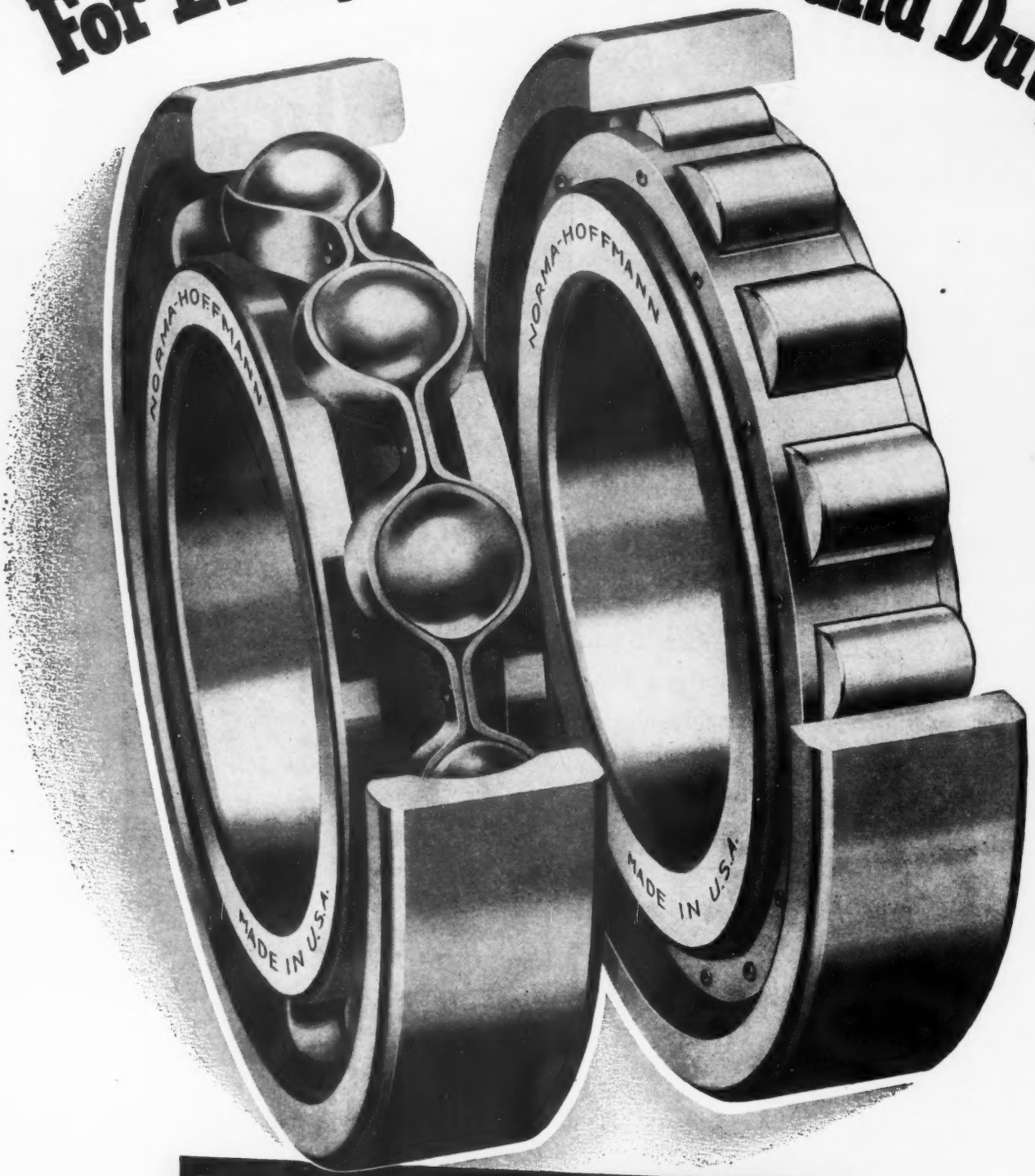
STAINLESS STEEL VALVES AND FITTINGS

GATE, GLOBE, Y, CHECK, TANK, SAMPLING AND V-PORT VALVES
SCREWED, FLANGED AND WELDED FITTINGS

ALLOY STEEL PRODUCTS COMPANY, INC.

1224 WEST ELIZABETH AVE. LINDEN, N. J.

For Every Load, Speed and Duty



"NORMA-HOFFMANN"

Precision Bearings

BALL, ROLLER, THRUST—3000 SIZES

NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONNECTICUT

WHITE-painted plant interiors help to provide better seeing and greater productive efficiency.

American industry recognizes the importance of quick, easy, accurate seeing to production efficiency and general employee welfare. And – because good seeing admittedly depends on good LIGHT, 63.1% of America's plants say they plan on improved lighting as a vital part of their "general modernization" programs.

If *your* plant is planning on better light for better seeing, don't forget that PAINT IS PART OF THE LIGHTING SYSTEM. Your local lighting engineer will tell you that white-painted plant interiors help make good lighting better because they reflect 80 to 90% of both natural and artificial light.

Furthermore, they help *distribute* the light evenly throughout the work area and reduce the harsh shadows and brightness contrasts which inhibit easy, accurate seeing. For down-to-earth data on this partnership of Light and Paint, send today for a free copy of "Light and Color in the Work-World."

BARRELED SUNLIGHT

PARTNER OF LIGHT FOR NEARLY HALF A CENTURY

U. S. GUTTA PERCHA PAINT COMPANY
201 Dudley Sreet, Providence 1, Rhode Island

I'd like to know more about the partnership of Light and White Paint. Please send me a free copy of "LIGHT AND COLOR IN THE WORK-WORLD."

COMPANY.....

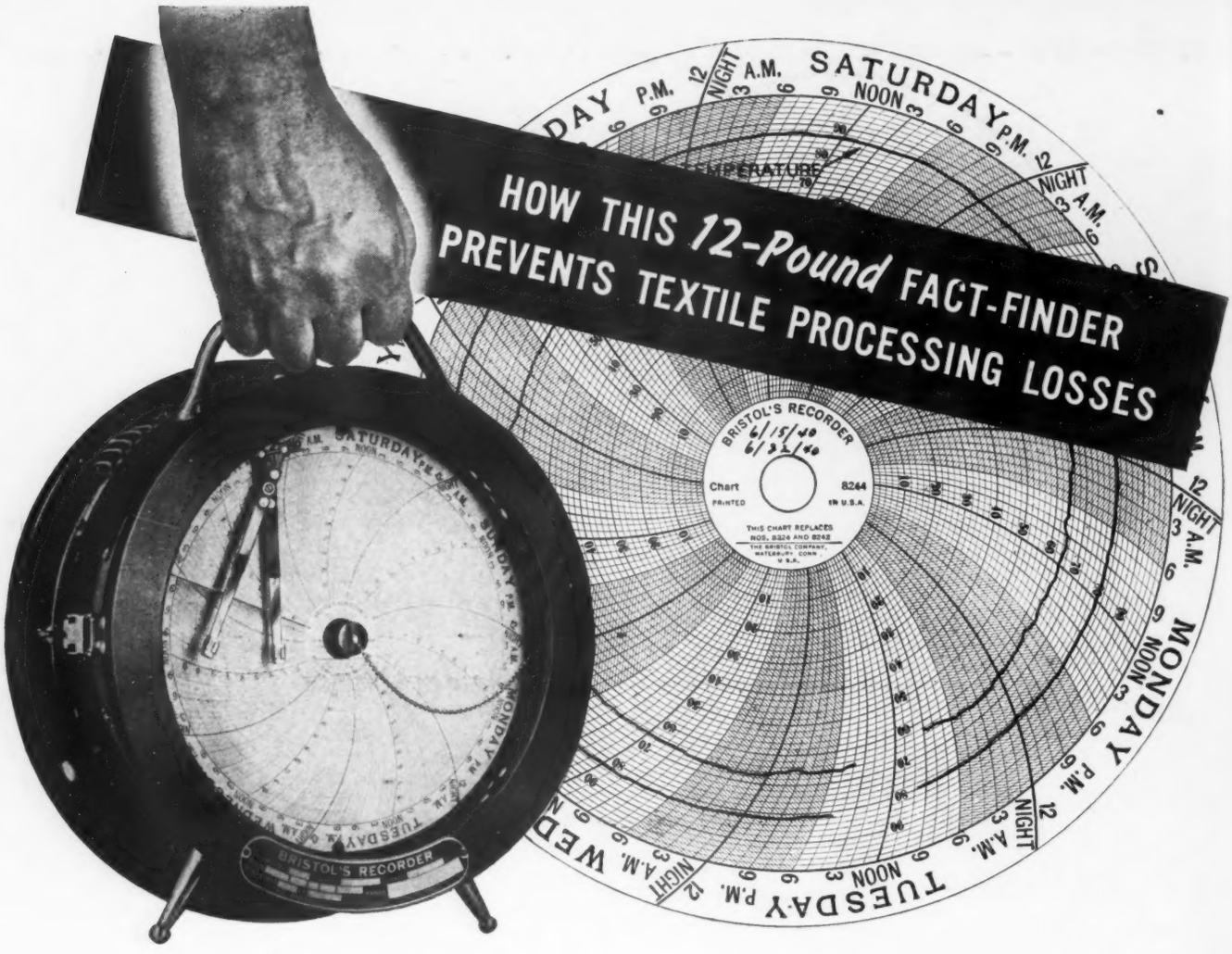
STREET AND NUMBER.....

CITY..... ZONE..... STATE.....

MY NAME IS.....

MY TITLE.....

© 1946 U. S. Gutta Percha Paint Company



BRISTOL'S PORTABLE THERMO-HUMIDIGRAPH gives you an exact, continuous record of humidity and temperature on 24-hour or 7-day charts

Fully self-contained and weighing only 12 pounds, this Bristol Portable Thermo-Humidigraph is easy to carry . . . can be hung up or set down wherever needed, indoors or out, for an overall survey of humidity and temperature conditions. By means of a new, improved hygroscopic measuring element, it records humidity in colored ink along with temperature on 8-inch charts that give you the whole story at a glance. No guesswork. No need for humidity tables, computations or wet bulb readings.

With this simple, compact instrument leading mills are now getting the detailed information needed to keep humidity and temperature at peak efficiency. Read what a few of the many mill executives have written about Bristol's Thermo-Humidigraph:

". . . *Helps maintain an even temperature and humidity . . . saving money by cutting down waste and giving a more uniform product.*"

"*. . . Gives us a check on the machines used for correcting the humidity . . . we can keep a better check on the weight of the yarn.*"

". . . *The most economical method of providing a record of the relative humidity in our manufacture.*"

". . . *Elimination of doubt as to causes of trouble has enabled us to maintain uniform conditions and has reduced losses.*"

SERVES THE WHOLE FIELD

Bristol's Thermo-Humidigraph provides vital facts for every textile operation where temperature and humidity are factors . . . including carding, combing, roving, spinning, weaving, knitting and throwing . . . and for every type of textile, from cotton, wool and silk to the latest synthetics.

WRITE FOR DATA

In addition to the spring chart-drive model shown, Bristol's Thermo-Humidigraph is also furnished in electric-drive, with fan, for areas where there is not enough natural circulation to bring a representative air sample in contact with the temperature and humidity measuring elements; and, as a Humidigraph only, without the temperature-measuring element. For further information address THE BRISTOL COMPANY, 157 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ont. Bristol's Instrument Co., Ltd., London, N. W. 10, England.)

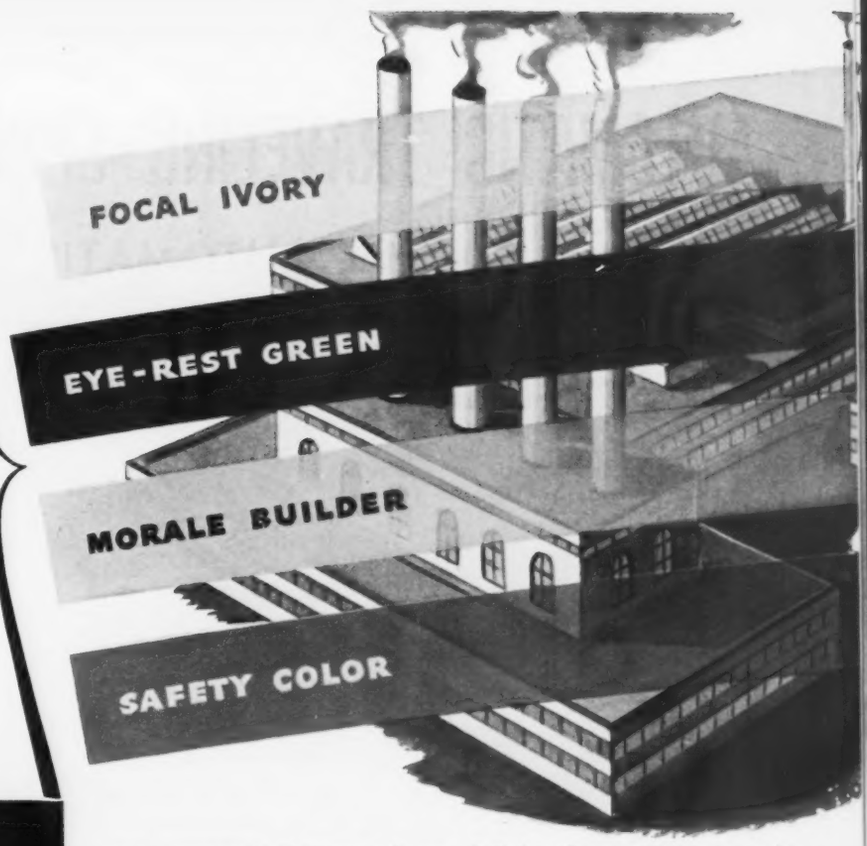
BRISTOL

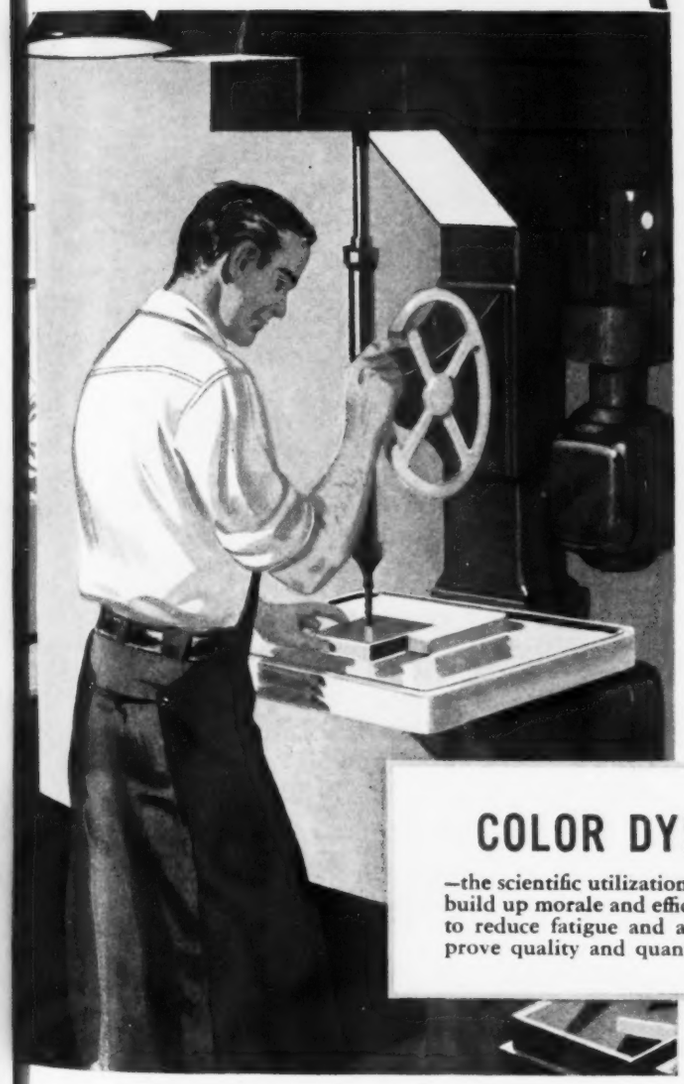
Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

COLOR GUARDS

that promote safety— reduce absenteeism— increase production!





IN PITTSBURGH'S new science of Color Dynamics, every color used on the machines, walls, floors and ceilings of a plant has definite duties. *Focal colors* and *eye-rest colors* guard workers' eyes—minimize "eye fatigue." *Morale building colors* guard against mental depression. *Safety colors* guard against danger.

Pittsburgh technicians have developed a set of principles which make it easy to select the right color for each particular job.

In painting a machine according to the principles of Color Dynamics, color is used to enable the worker to see his work more clearly—to provide an easily visible contrast between the machine itself and the material being fabricated—to emphasize the operating parts of the machine and to focus the operator's attention on those parts. This means less eye travel, less "eye fatigue" . . . better work, and more of it, per man-hour.

Prove this by applying the scientific principles of Color Dynamics to one or two of your own machines. Then compare the before-and-after output of the operators of those machines.

COLOR DYNAMICS

—the scientific utilization of color energy to build up morale and efficiency of workers—to reduce fatigue and absenteeism—to improve quality and quantity of production.

Color Dynamics may be applied in your plant gradually—as part of your normal maintenance operation. Our new book on this subject will give you an entirely new conception of the practical value of color in industry. May we send you a free copy of "Color Dynamics" which explains in detail exactly how color can be used to improve morale and increase efficiency? Pittsburgh Plate Glass Company, Paint Division, Dept. TW-9, Pittsburgh 22, Pa.

PPG

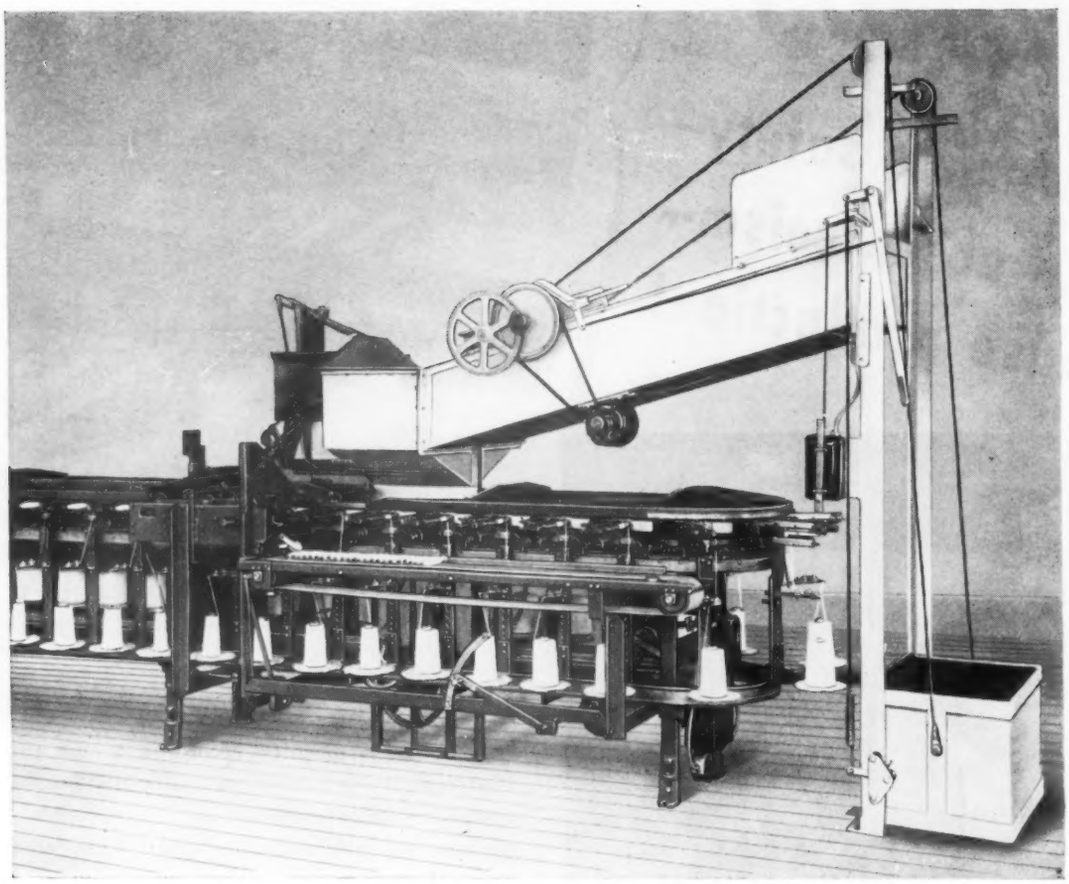
PITTSBURGH PAINTS

PITTSBURGH PLATE GLASS COMPANY, PITTSBURGH, PA.

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

AUTOMATIC TRAVELING SPINDLE FILLING WINDER

FULL AUTOMATIC OPERATION



Our Standard Rayon Quiller has 100 spindles and takes the regular 7⅜", Draper head, bobbin wound about 1" in diameter and runs at a spindle speed of 5,000 R.P.M.

The wound bobbins are handled very gently and placed on a wide apron, side by side, where they can be examined and marked and then placed directly on pin boards.

The empty bobbin handling is wholly automatic, the bobbins being delivered to a box which rises and dumps itself and returns automatically, and there is a large reserve of about 4,000 bobbins in the hopper and chute.

The wind on the bobbins is of a new type, overlapping layers, so that an excellent weaving bobbin is obtained without over-tensioning.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

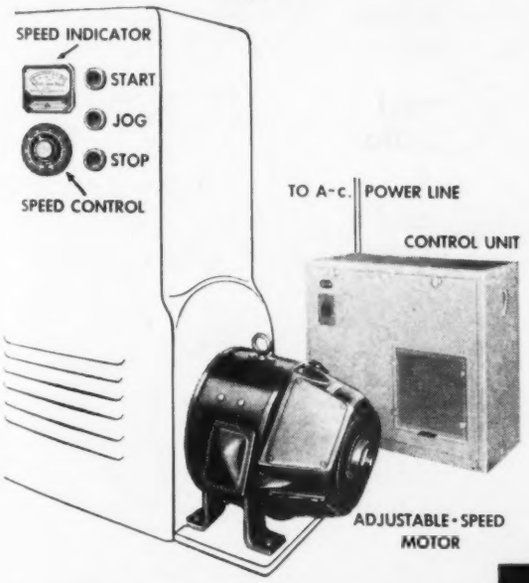
STEPLESS
Speed Changes

. . . from A-c. circuits!

RELIANCE V★S DRIVE

V★S, the *All-electric, Adjustable-speed Drive operating from A-c. Circuits,* brings to any production or processing operation an unlimited selection of *stepless* speed changes. Acceleration and deceleration are unbelievably smooth. And every V★S function can be performed automatically or manually, with all-electric control from nearby or remote stations!

Whatever flexibility of operation you need to increase quantity and quality of output can be provided the V★S way—simply, safely and economically. V★S control means instantaneous starts and stops—slow speeds for inching, threading or close inspection of work in process—maintenance of proper tension——reversal at any point desired. For more money-saving facts about the V★S Drive write for Bulletin 311.



Conveniently-packaged, space-saving V★S Drives available in Rotating or Electronic Systems or a combination of both.

RELIANCE ELECTRIC & ENGINEERING CO.

1086 Ivanhoe Road **Cleveland 10, Ohio**

Appleton, Wis. • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Denver • Detroit • Gary Grand Rapids • Greenville • Houston • Kansas City • Knoxville • Los Angeles • Milwaukee Minneapolis • New Orleans • New York • Philadelphia • Pittsburgh • Portland, Ore. Rockford, Ill. • St. Louis • San Francisco • Seattle • Syracuse • Tampa • Tulsa • Washington, D.C. Sao Paulo, Brazil

RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

it's the SIDEWALL

V-Belt
In Sheave
Clearly, it's the sides of a V-Belt that do all the gripping on the pulley and get all the wear against the sheave-groove wall. That's why longer life for the sides means longer life for the belt!

of a V-Belt that Gets *All* the *WEAR* –

–That's Why the CONCAVE SIDE *is IMPORTANT!**

Every man who works around V-Belt driven machines knows from experience that it is nearly always the *sidewall* of a V-Belt that *wears out first.*

There is a perfectly natural reason why the wearing out starts with the sidewall—and here it is—

It is the *sidewall* of a V-Belt that has to *grip* the pulley and drive it. It's the sidewall that *transmits* to the pulley all the power the pulley ever receives. No other part of the belt gets anything like the *actual* wear the sidewall gets. Is it any wonder the sidewall of the *ordinary* V-Belt is the part that wears out first? Clearly, then, prolonging the life of the sidewall is the *one thing needed* to prolong the life of the belt!

The simple diagrams on the right show clearly why the ordinary, *straight-sided* V-Belt gets excessive wear along the *middle* of the *sides.* They show also why the Patented Concave Side *greatly reduces* sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight sided V-Belts can possibly give.

THE GATES RUBBER COMPANY

DENVER, U. S. A.

World's Largest Makers of V-Belts

Gates

THE MARK OF SPECIALIZED RESEARCH

469

*Even MORE Important NOW

with Rayon Cord and Other *Stronger Tension Members*

Now that Gates Specialized Research has resulted in V-Belts having much stronger tension members—tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important today than ever before!

Straight Sided V-Belt

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall

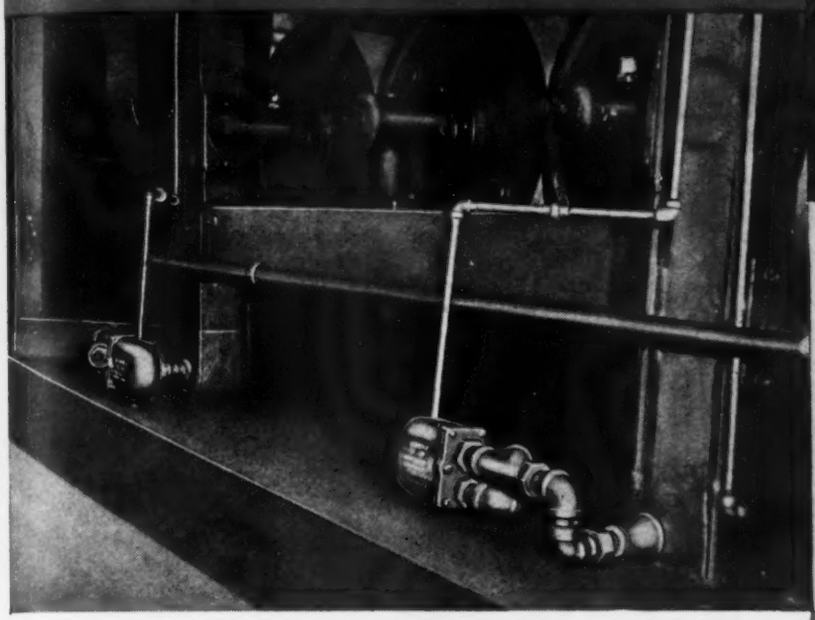
Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** **of the U. S. and 71 Foreign Countries**

Dyeing AND *Drying*



WITH SARCO STEAM TRAPS AND CONTROL

Rotating cylinders as used in the paper and textile industries accumulate heavy condensate if not properly drained and vented. If any cylinder lags behind others—the material sags on one side, stretches until it breaks on the other. Hours are lost in starting up again.

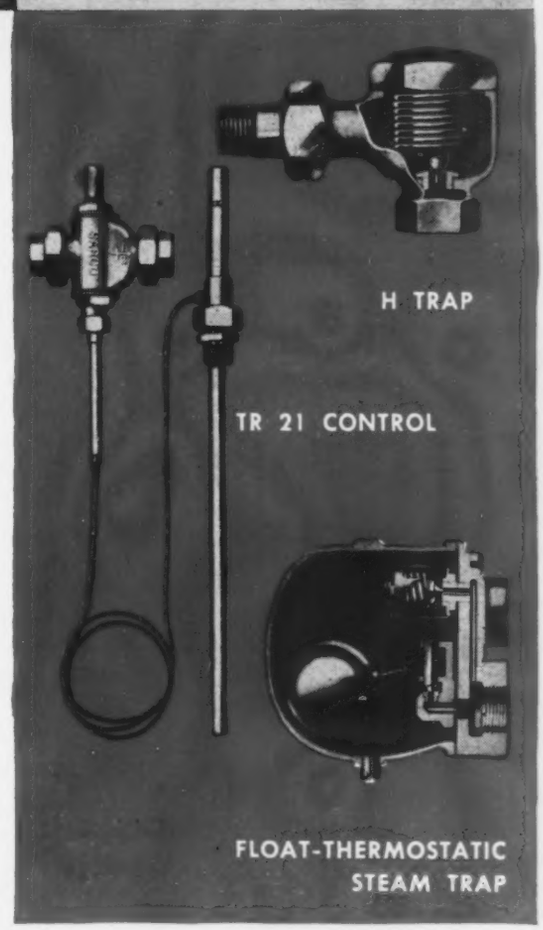
Sarco FT Steam Traps with H Air Vents at the top settled this problem in a large textile plant in Brooklyn. Sarco TR 21 Temperature Controls are used on the dye vats which immediately precede the drying operation.

This job was engineered by the local Sarco representative. The cost was negligible compared to the results obtained.

Adequate removal of condensate and air, and satisfactory temperature control can provide that added margin of profit in any industry using steam. The combined advantages of faster work, fewer stoppages and rejects and less fuel will work for you every hour.

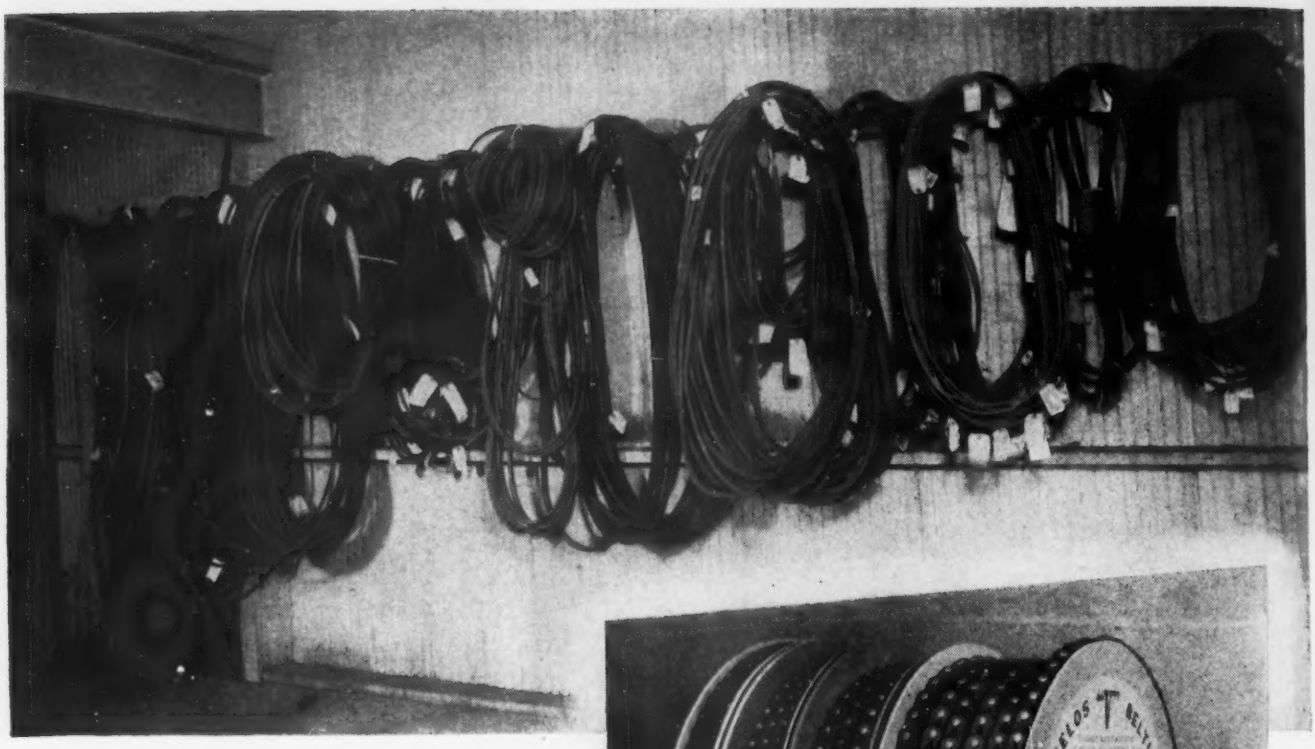
Sarco products work as a team. The right combination costs less in the first place—lasts longer—serves best.

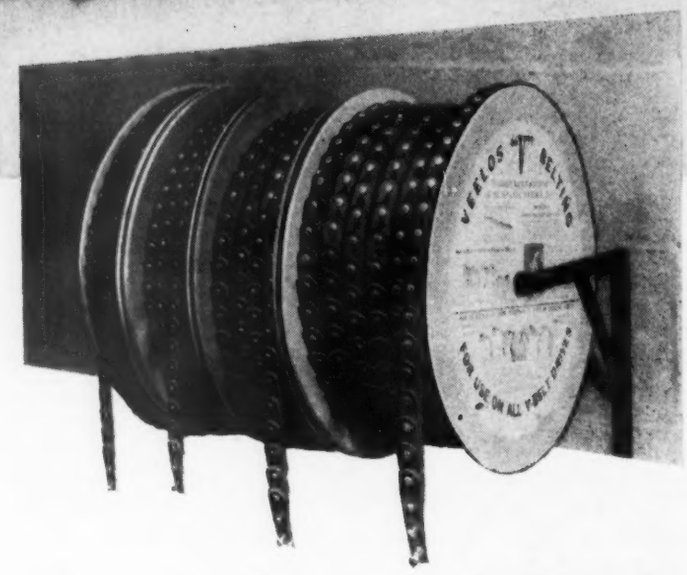
143



SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
475 FIFTH AVE., NEW YORK 17, N. Y.
SARCO CANADA, LTD., TORONTO 1, ONTARIO





316 sizes OF ENDLESS V-BELTS CAN BE Replaced with only 4 sizes of Veelos

FROM only four widths of Veelos—the link V-belt—you can make up 316 standard sizes of industrial and fractional endless V-belts. There's no need to stock spare sets of endless belts for each drive.

Large, costly inventories are eliminated... no deterioration of spare belts... no obsolescence.

Veelos on reels saves stockroom space... reduces inventory records... *is easy to locate and easy to install.*

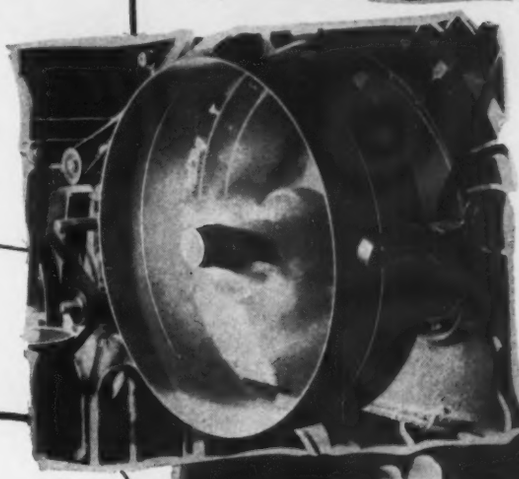
Made in all standard sizes... fits all standard V-belt grooves ... available in standard 100-foot reels.

VEELOS
THE LINK
V-BELT
Adjustable to any Length
Adaptable to any Drive

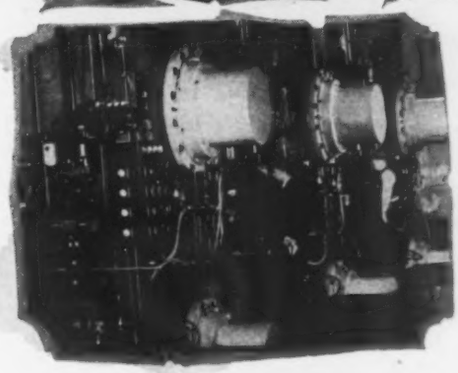
MANHEIM MANUFACTURING & BELTING CO., MANHEIM, PA.

Tested • Proved • Adopted by American Industry

"Bearings RUN 10% COOLER



SINCE CHANGING TO Tycol industrial Greases"



"Production speeded 65%...
Repair costs slashed 30%...
Deposits eliminated...
Highly stable—doesn't leak...
Consumption cut 25%..."

This report from a plant engineer typifies the kind of trouble-free, cost-cutting lubrication provided by Tycol Industrial greases. They contain more high-grade cylinder oil — less soap — which means better performance in every application.

For aid in the selection of Tycol greases best suited for your particular needs, contact your nearest Tide Water Associated office today.

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C.
Pittsburgh • Philadelphia

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

LUBRICATION-"ENGINEERED TO FIT THE JOB"

Otis maintenance man measuring the clearance between brake drum and brake lining. Standard clearance for the brake illustrated is six one-thousandths of an inch — or about twice the thickness of a human hair.

PERSONAL SERVICE BY THE MANUFACTURER

OTIS MAINTENANCE FOR OTIS ELEVATORS

Every elevator under Otis Maintenance receives attention that is made to order. Every inspection is a personal service; adapted to meet specific conditions, volume of traffic handled, and type of equipment installed.

This service is brought to your building through one of the 245 local Otis offices specializing in your requirements and the needs of your community.

It is important to note that Otis Maintenance does not stop there. Each local office is backed up and supervised by a Maintenance district office, which provides special tools and materials. Back of the districts are ten zone offices providing even greater facilities. Back of the zones is the headquarters organization with all of the engineering, research and production capacity of the manufacturer of more than half of the world's elevator equipment.

Through all of this organization your personal Maintenance service never loses its identity. Individual reports on performance are received and analyzed straight through to headquarters. Every resource of the entire Otis Elevator Company is devoted to making your service meet Otis standards.

Complete, flat rate Maintenance Service for Otis elevators is available through your local Otis Elevator Company office.

Otis

ELEVATOR COMPANY

OFFICES IN ALL PRINCIPAL CITIES

Today's modern techniques, by which Royersford Spring-Beard Needles are made, developed from the accumulated skill and experience of three generations of master craftsmen. That is why so many of America's leading full-fashioned hosiery manufacturers make Royersford Needles their guide to better fabrics, bigger profits and a lower unit cost. After all, it's the needles that knit the stocking.

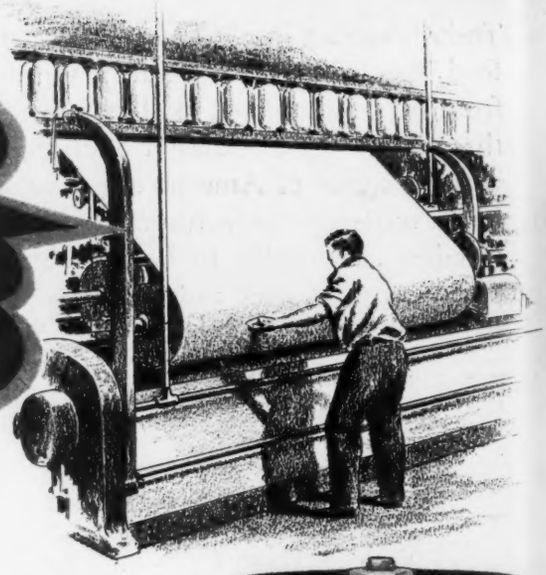
ROYERSFORD NEEDLE WORKS, INC., Royersford, Pa.
Makers of a complete line of Full-Fashioned specialties.

Hands of experience

Royersford

—the Master Needle Maker

VALVES designed for the Textile Industry



Years ago, when American Industry was still in its infancy, The Wm. Powell Company adopted a definite, farsighted policy . . . to concentrate on making valves only—valves of *every* design, for *every* service in *every* branch of industry.

That is why, today, Powell can supply valves to meet every known flow control requirement in your plant. And, if you have any flow control problems, Powell Engineers will gladly help you solve them.

When writing for catalogs, kindly specify whether you are chiefly interested in Bronze, Iron, Steel or Corrosion-Resistant Valves.

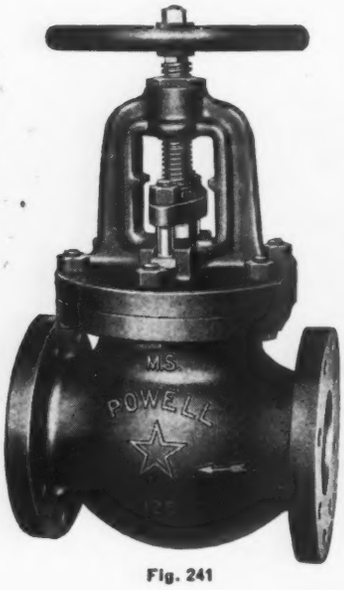


Fig. 241

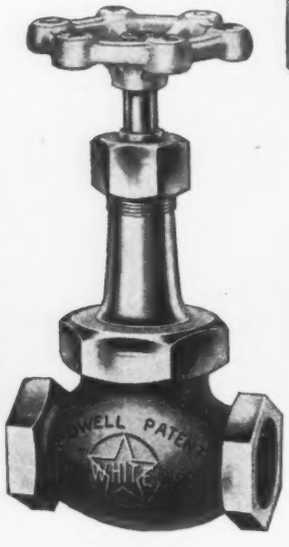


Fig. 1708

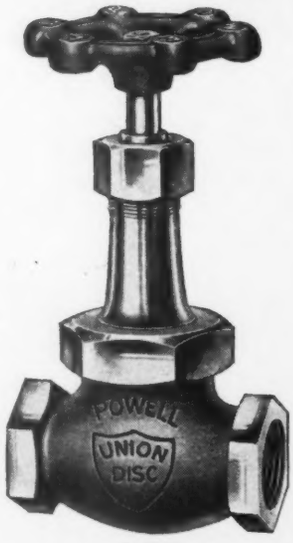


Fig. 150

Fig. 1793

Fig. 560

Fig. 241—125-pound Iron Body Bronze Mounted Globe Valve. Has flanged ends, outside screw rising stem, bolted flanged yoke and regrindable, renewable bronze seat and disc. Also available in All Iron.

Fig. 1708—200-pound Bronze Globe Valve with screwed ends, union bonnet, renewable stainless steel seat and regrindable, renewable, wear-resisting "Powellium" nickel-bronze disc.

Fig. 150—150-pound Bronze Globe Valve with screwed ends, union bonnet and renewable composition disc.

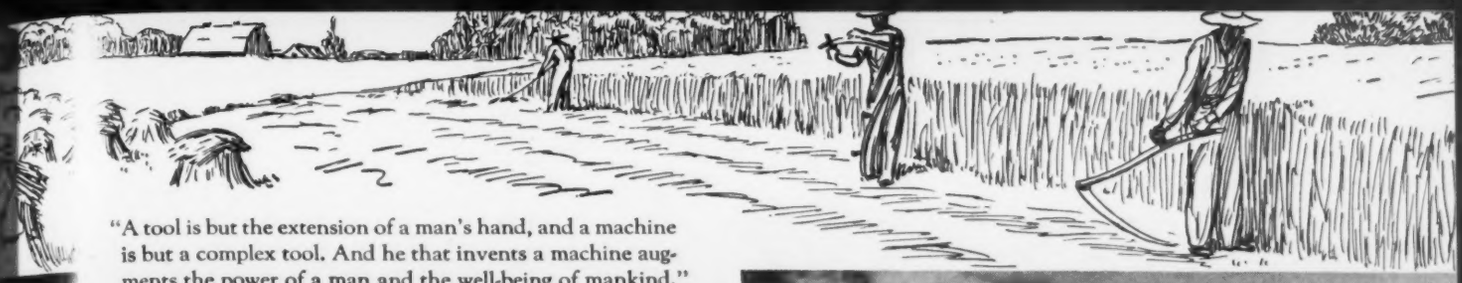
Fig. 560—200-pound Bronze Regrinding Horizontal Swing Check Valve. Screwed ends, screwed-on cap and regrindable, renewable bronze disc.

Fig. 1793—125-pound Iron Body Bronze Mounted Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke, bronze seat rings and taper wedge solid disc. Also available in All Iron.

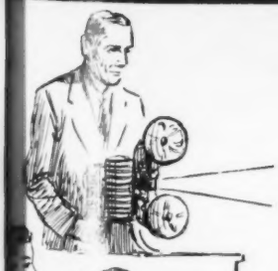
The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

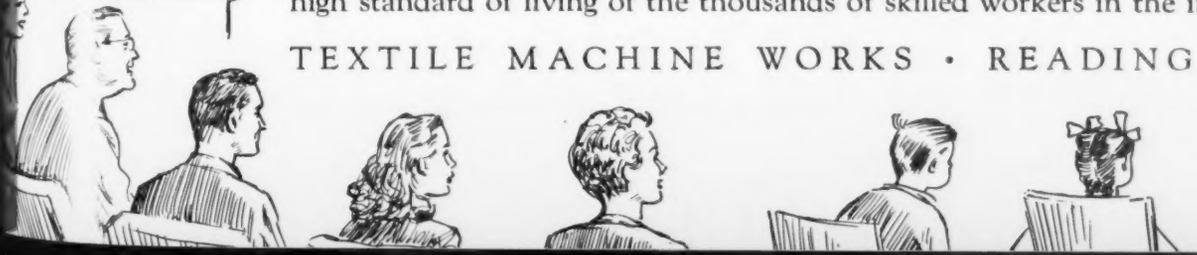


"A tool is but the extension of a man's hand, and a machine is but a complex tool. And he that invents a machine augments the power of a man and the well-being of mankind."



Modern machines have made Americans the world's most efficient workers, and with every increase in efficiency, the worker has increased his share of the good things of life and the time in which to enjoy them. In Full-Fashioned Knitting, the READING Machine is the machine that insures the high standard of living of the thousands of skilled workers in the industry.

TEXTILE MACHINE WORKS · READING, PA.



Lovely Harvest . . . Sheer, flawlessly knit stockings are truly a lovely harvest. To achieve this high quality in full-fashioned stocking fabrics, only the finest needles can be used. TMW Needles are "Fixture Drawn"*—an exclusive TMW process which holds the needles straight and true. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

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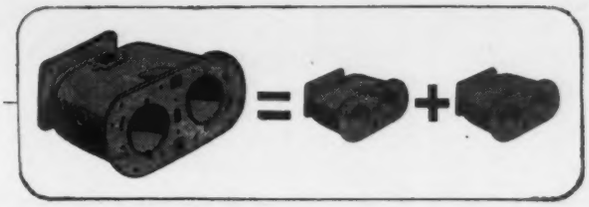


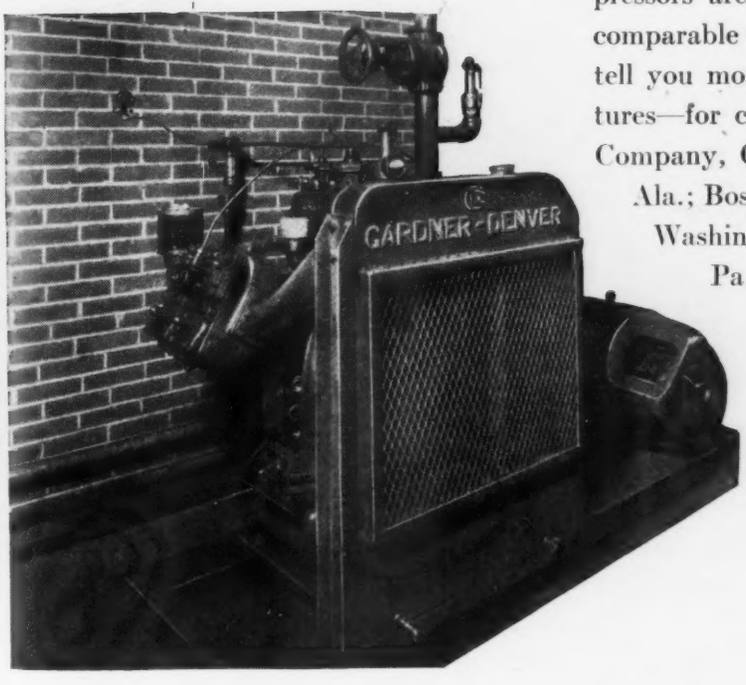
for you . . .

we made little cylinders out of big ones!

Conventional air compressor design calls for one large, low pressure cylinder in conjunction with each high pressure cylinder. But Gardner-Denver engineers were not satisfied merely to follow established practice. So, in designing the Class WB Two-stage Vertical Water-cooled Compressors, Gardner-Denver engineers put in *two* small diameter, low pressure cylinders for each high pressure cylinder.

Thousands of "WB" compressor owners have reaped the benefit! For the unique "WB" design permits lower air temperatures—with corresponding saving in horsepower. Inertia loads are reduced because all pistons can be small and lightweight. Better water cooling is possible—and that, in turn, means better lubrication, reduction of cylinder distortion, and longer life. "Oil thinning" is eliminated and thus much less lubrication oil is used.

Gardner-Denver "WB" Vertical Water-cooled Compressors are remarkably compact—yet have efficiencies comparable to that of large horizontal compressors. Let us tell you more about their space-saving, cost-saving features—for complete information, write Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.



Gardner-Denver Class "WB" Two-stage Vertical Water-cooled Compressor—available with built-in motor with V-belt or direct drive. Capacities 142 to 445 cubic feet displacement per minute.

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HIGH STABILITY FOR CONTINUOUS LOW POWER CONSUMPTION

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Sinclair LILY WHITE OIL, properly selected for the specific service, aids in reduction of power cost.

Correct lubrication assures minimum friction, long bolster life, and low power consumption in continuous operation.

LILY WHITE OILS are highly finished spindle oils. They possess stability characteristics to resist deterioration. Viscosity does not increase in use. Bolsters are free from deposits.

These oils are made from selected crudes. Tough film strength and high lubricity are built into the oil through special refinement.

LILY WHITE OILS are made in viscosities to suit all package loads and spindle speeds.

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FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

WHY TEXTILE MACHINE DESIGNERS SHOULD

think in terms of MAGNESIUM!

EFFICIENCY

Magnesium's light weight in textile machinery parts means low inertia—fast stops and starts. It reduces vibration, the major cause for machinery going out of adjustment.

EASY HANDLING

Bobbins, warp beams, section beams, cloth rolls, jack and edge spools, all must be carried around the mill. It's an easy handling job for everyone, when these items are made of magnesium, because this metal is so light.

LOWER SHIPPING COST

Shippers notice the big difference in weight. Sizable savings are made on freight, when shipping yarn loaded section beams to branch plants or outside mills.

LOW MAINTENANCE COST

Maintenance engineers will have less fixing and replacing of parts to do. Magnesium's high strength and its lightness mean less wear and tear on equipment running at high speeds.

THIS BOOK WILL HELP YOU THINK IN TERMS OF MAGNESIUM....

The ever-present demand for higher quality fabrics at lower cost is causing textile machinery designers to use more and more lightweight, high-strength magnesium. This book contains what every designer should know about magnesium. Order your book today! Write Aluminum Company of America, Sales Agent for American Magnesium products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

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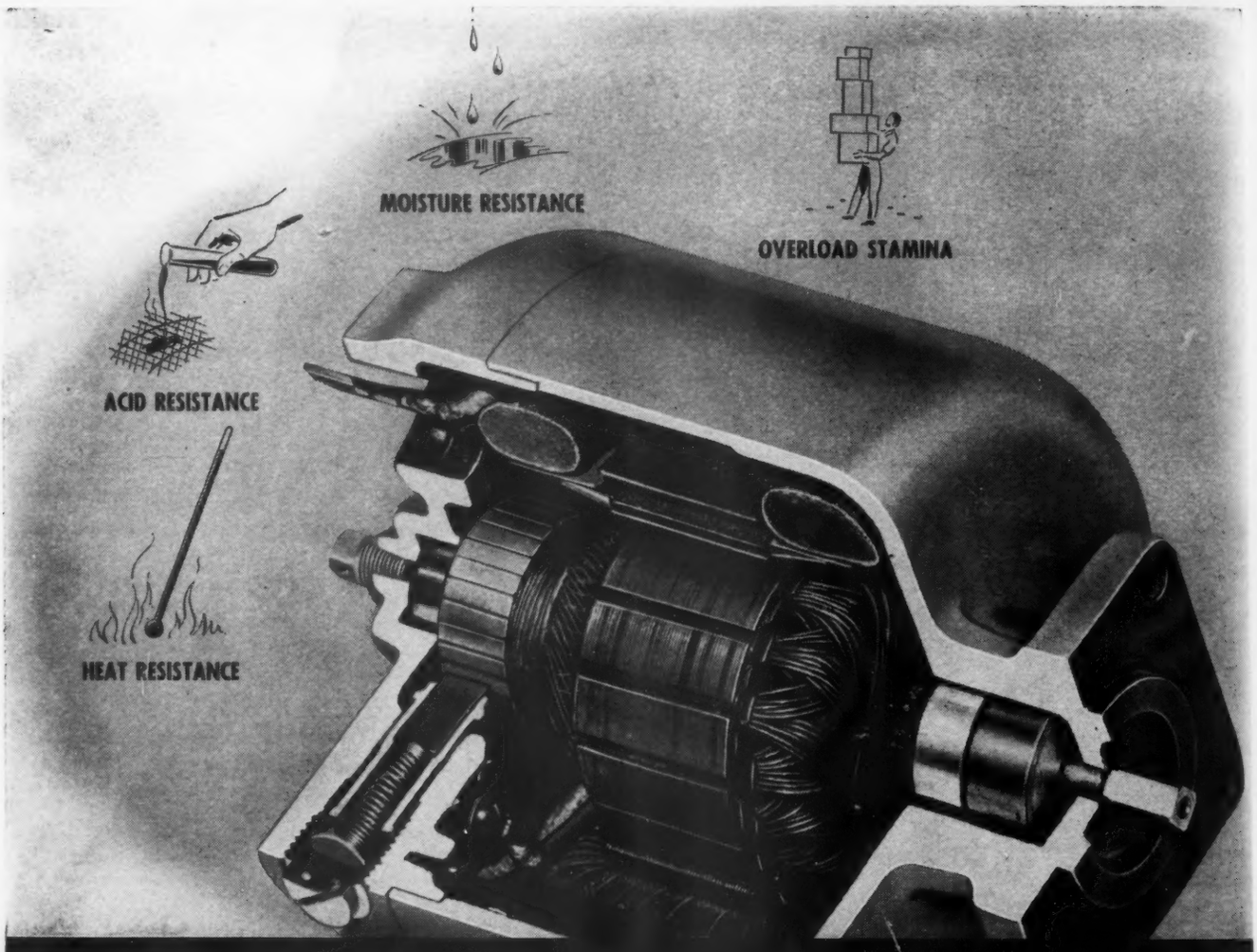

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It's worth plenty, if efficient, dependable operation of electrical equipment is important to your business—if moisture, oil, heat, overload, corrosive acids and vapors and human carelessness or inexperience represent hazards that can throw expensive machinery out of service or cause costly delays.

Fortunately, the cost of added protection against the penalties frequently imposed by these conditions is slight—far less than the penalty imposed by failures that can be avoided. For the advantages of High-Safety-Factor Insulation can be added at only a small fraction of the cost of the equipment.

That's why the swing is to Fiberglas Electrical Insulation Materials—why so many engineers, production executives and maintenance men are insisting on Fiberglas Insulation for the equipment they buy and for their maintenance work.

Get complete information about this better electrical insulation material—write for your copy of the folder "Are your motors a good insurance risk?" The names of the Distributors serving your locality will also be furnished, if you desire. Owens-Corning Fiberglas Corporation, Department 864, Toledo 1, Ohio. Branches in principal cities.

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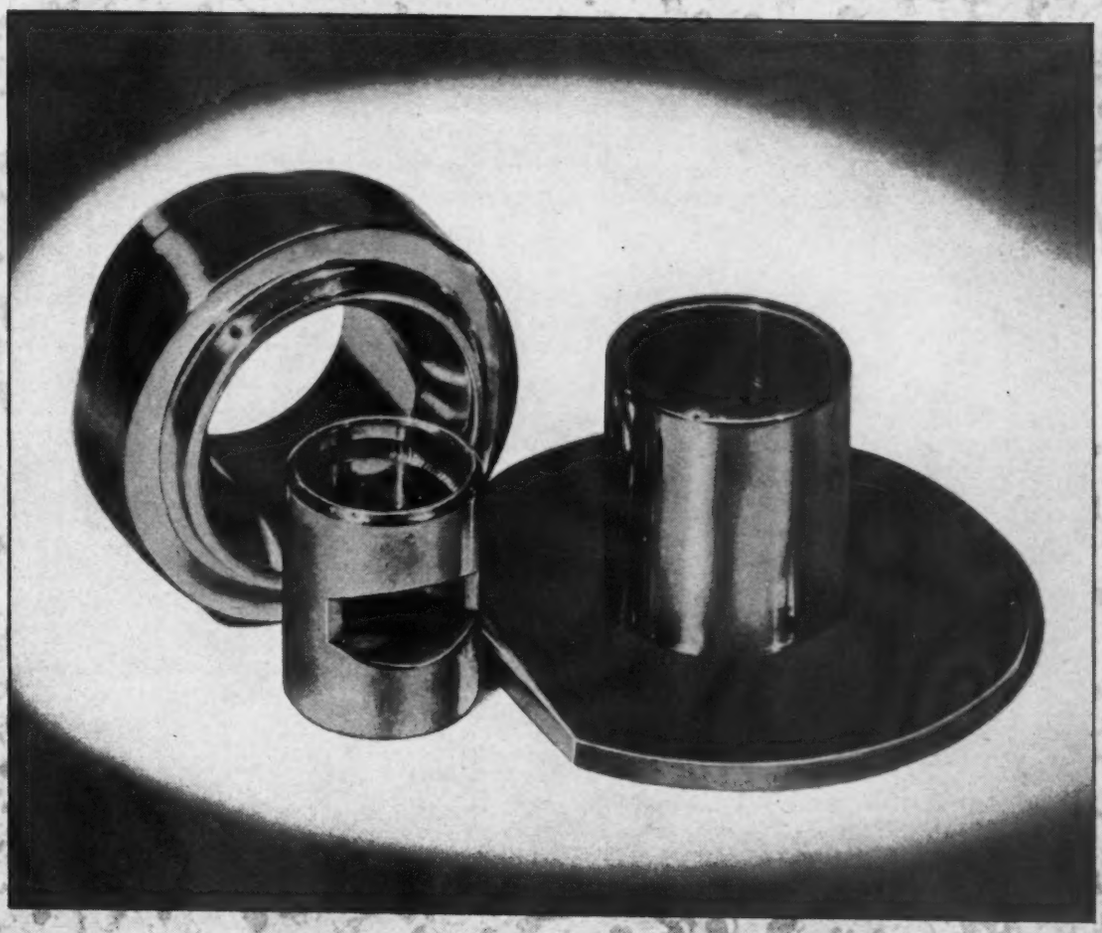
Fiberglas is the trade name for these electrical insulation materials and many other products made from fine, strong, pliable, moisture and heat-resistant, ageless glass fibers.



The quality of a Bunting Bearing is in the material, the accuracy and the fineness of finish. Special bearings made by Bunting to your print give you—with complete fidelity—exactly what you specify. Our engineers will be glad to work with you. The Bunting Brass & Bronze Co., Toledo 9, Ohio. Branches in all principal cities.

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48

BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS

Planned maintenance and careful attention to lubrication have paid big dividends to this mill over a period of many years. The Gulf Lubrication Engineer in the picture (left) is checking loom lubrication.

Proper lubrication smooths the way to greater yardage, lower maintenance costs—

it pays to have a Gulf Lubrication Engineer "in the picture"

THE efficiency of textile machine lubrication has a direct bearing on yardage produced and on costs for maintenance and power. That's why a majority of leading mills keep a Gulf Lubrication Engineer "in the picture" and follow his helpful advice on their lubrication problems.

Gulf Lubrication Engineers recommend the proper application of the right oils and greases for every moving part—then co-operate closely with mill operating and maintenance men to keep lubrication on a sound scientific basis the year round. Result: less machine down time, greater yardage, and lower power and maintenance costs.

Make sure you are getting the advantages of all recent developments in lubricants and application methods. Write, wire, or phone your nearest Gulf office today and ask a Gulf Lubrication Engineer to call.

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Ask the crew in any warehouse where Mobilift is in use. They'll tell you how much simpler, faster and smoother a Mobilift moves materials. They'll tell you, too, that Mobilift is safer and easier than the old "muscle methods" of the hand truck. And if you check with the superintendent, he'll tell you that Mobilift pays for itself many times over in lower handling costs. Join the thousands of plants that are cutting production costs with Mobilift.

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MOBILIFT *Moves Materials like a Giant!*

VAUGHAN MOTOR COMPANY ★ 835 S. E. Main Street, Portland 14, Oregon

WINDING WOOL

The "ROTO-CONER*" Way

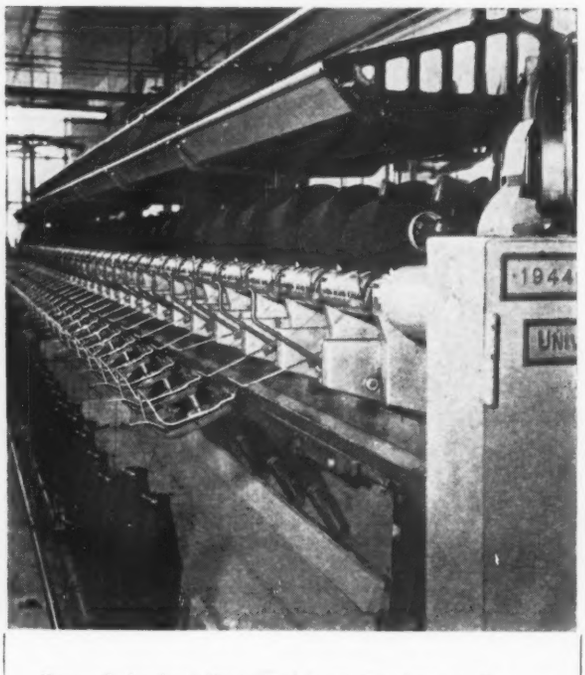
Now — the same yarn-traversing and package-driving method that revolutionized the open-wind coning and tubing of cotton yarns is available for winding more abrasive yarns.

The yarn traverse guide and package-driving roll are combined in a single grooved Rotary Traverse on the Roto-Coner*, the Universal winding machine which is used for winding a major percentage of the country's paper cones and tubes for knitting, warping, dyeing and twisting.

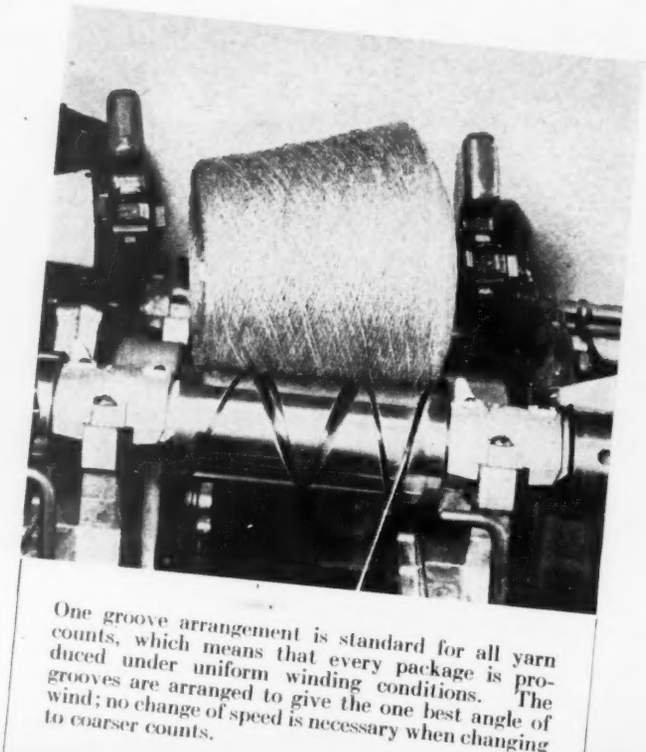
For wool, worsted and spun rayon, a cast-iron metal roll is used. The roll drives the package, the helical grooves direct the yarn. By performing the two functions which, on a reciprocating guide machine, require many moving parts, the Rotary Traverse reduce the element of wear to a minimum, eliminating vibration and insuring the winding of better packages.

For further information, address Universal Winding Company at Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles, Montreal or Hamilton.

*Reg. U. S. Pat. Off.



Part of the installation of Roto-Coners* at Draper Brothers Company, Canton Mass., equipped with cast-iron Rotary Traverse winding cones that help to preserve the fine quality of Draper Woolens.



One groove arrangement is standard for all yarn counts, which means that every package is produced under uniform winding conditions. The grooves are arranged to give the one best angle of wind; no change of speed is necessary when changing to coarser counts.

23-6-13

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Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

LABOR DAY • 1946

—Time for wise union leadership

LABOR DAY, 1946, finds one hopeful element in the relations between American management and labor which was not there on Labor Day, 1945. It comes in recent expressions by a number of national leaders of organized labor that increased "real" wages depend upon *increased productivity,* i.e. increased output per man-hour. Increased money wages which are promptly offset by higher prices do nobody any good.

If these expressions, *which still remain to be substantiated by practical performance,* come to be accepted by the rank and file of labor in each community, Labor Day, 1946, can usher in a period of great and perhaps unprecedented improvement in the economic wellbeing of wage earners—as well as the wellbeing of the country at large. If, on the contrary, they remain merely window dressing and there is a continuation of the post V-J Day process of increasing wages and then prices, the outcome can only be the bursting of an inflationary bubble, with attendant suffering for workers and the community generally.

Competition requires management to bear down heavily on increased labor productivity as a prelude to wage increases. Management, however, has rarely made a more forthright statement on the importance of increasing labor productivity than that contained in a recent issue of LABOR'S MONTHLY SURVEY, an official publication of the American Federation of Labor.

William Green, the Federation president, led off with a "message to American workers." He remarked, "Our major need is increased volume of production." Observing that "wage increases this spring have been paid for by raising prices," the survey itself goes on to say that "Today America's ability to raise wages without increasing prices and living costs depends on increasing productivity in civilian industries . . . Here is the challenge to free labor and free enterprise today: *Cooperate to increase productivity and raise living standards without strikes.*" (Italics supplied.)

The importance of increasing production was also recently stressed by Walter Reuther, President of the United Automobile Workers, C.I.O., who remarked that his union "is just as eager as management to get the (automobile) industry into maximum production." In taking this general line he was in accord with the position of Philip Murray, head of the C.I.O., who in a book, "Organized Labor and Production" written with Morris L. Cooke, remarks that, "The modern labor leader also realizes that to receive a good day's pay a man must do a good day's work and that *increased productivity has been the vital factor in the country's industrial supremacy and its relatively high wage scale.*" (Italics supplied.)

In citing increased productivity as the key to increased "real" wages these labor leaders—and management—have the historical record entirely on

SPOT CHECK ON LABOR OUTPUT

In the absence of reliable general statistics on what has happened to productivity of labor since V-J Day (because of strikes and reconversion complications) the McGraw-Hill Publishing Company asked the executives of a cross section of American industry to report their own impressions. The questions asked and summaries of the replies, which varied markedly from industry to industry and plant to plant, follow.

Question No. 1. How well have workers performed since V-J Day as compared to their pre-war effort?

Answer. Worker effort has been below pre-war. There are exceptions, particularly among older and more experienced workers; and there are quite a few signs of improvement.

Question No. 2. How much headway have you been able to make since V-J Day in improving labor productivity by better equipment and organization?

Answer. Some headway is generally being made, but it has been greatly retarded by inability to get new equipment and, in some cases, by lack of labor cooperation in improvements in organization.

Question No. 3. How much improvement in equipment and organization is to be anticipated in your business over the next year?

Answer. Marked improvement in productivity (in a few cases as much as 20 per cent) can generally be made if there is sustained production and full cooperation between labor and management.

their side. In the 40 years prior to the outbreak of World War II output per man-hour for the country as a whole was approximately doubled. Over the same period the "real" hourly earnings of industrial workers were also approximately doubled. There were, of course, great variations in the increase of output per man-hour from one line of activity to another. Also, there were periods when increases in "real" wage rates lagged behind increases in productivity. But for the 40 year period as a whole and the economy as a whole there is no mistaking the fact that the route to increased "real" wage rates was increased productivity.

Three economic factors played major roles in this doubling of production per man-hour which has made America the industrial marvel of the modern world. One was the skill and diligence of American workers. A second was the skill and diligence of American management in organizing production. A third was the improvement of machinery and the increased application of power to it.

Wartime Record

During World War II this sustained increase in the productivity of labor in *civilian* manufacturing industries, which had averaged about 3 per cent a year, was brought to an abrupt halt. Much of the most efficient segment of the nation's labor force went to war or war industry. Also, civilian industry was starved for new equipment while we equipped our arsenals. The result was that the productivity of labor in those civilian manufacturing industries for which the government keeps records actually declined throughout most of the war. By 1945 it was no higher than in 1941, whereas, if it had maintained the long run average, it would have been about 12 per cent higher. In the meantime, however, average hourly wages in these civilian industries had increased about 40 per cent.

In *war* industry, which started from low levels of production at strange tasks, there were substantial increases in output per man-hour. Many of these increases involved new processes, improved techniques, and better machines which can be adapted over a period of time to the improvement of productivity of labor in civilian industry.

Since V-J Day, however, labor, led on by a misguided government, has had its sights on higher money wages instead of improving productivity which would have laid the foundation for increased "real" wages. Consequently, debilitating industrial strife ended in a round of wage increases which, in the absence of increased productivity, is being washed out by higher prices.

To Keep Production Rolling

However, as indicated by the summary of a McGraw-Hill sampling of the current experience of industry in increasing output per man-hour, which appears in the center of the page, there is hope that the situation ahead can be improved. After agonizing delays because of work stoppages, material shortages, and reconversion complications, industrial production is beginning to roll again. Allowed to roll it will not be long before it will be making those advances in productivity which are the only true basis for increased "real" wages.

If the process of keeping American industry rolling to new highs of productivity is to be resumed, management must see that the past practice of translating increased output per man-hour into increased "real" wages is not only sustained but wherever possible accelerated. For its part organized labor must abandon its manifold feather bedding rules and other production-restricting practices which afflict considerable segments of American industry. Further it must give incentive systems of pay, honestly conceived and honestly administered, a fair break. *Management and labor and government and the community at large must collaborate in removing that specter of working one's self out of a job which has been one of the greatest causes of restriction of output.*

The current emphasis by leaders of organized labor on the economic truth that increased output per man-hour is the only road to increased "real" wages is important. The next step is to see that recognition of this truth seeps into the rank and file of labor and industry and becomes the basis of a program of action at the local level. If it does, and quickly, Labor Day, 1946, may mark a tremendous turning point toward sustained prosperity not only for labor but the community at large. If it does not, union leadership will fail in its responsibility and must answer to the American people for the consequences of such a failure.

President McGraw-Hill Publishing Company, Inc.

THIS IS THE 50TH OF A SERIES

TEXTILE WORLD

SEPTEMBER, 1946 : VOL. 96 : NO. 9

22nd ANNUAL SYNTHETICS NUMBER

ONE TEXTILE INDUSTRY

SYNTHETICS are cutting across all divisions of the textile industry. There is not a textile mill in the country which has not felt their effect, and even the most vocal supporters of natural fibers have utilized synthetics.

In fact, at today's fiber and yarn prices, only the limited capacity of synthetic-fiber-producing plants is keeping synthetics from being used in quantity approaching that of cotton, if not exceeding. But supply is small—less than 900,000,000 lb. annual production of synthetics as compared with around 4,000,000,000 lb. annual consumption of cotton. Yet the impact of synthetics is infinitely greater than the relationship between these figures, a fact which has been repeatedly in evidence at such meetings as the recent Hershey Seminar, some of the Southern Textile Association meetings, and other gatherings of textile technologists.

In this twenty-second annual synthetics survey, emphasis is being given to synthetic staple fiber because, as is pointed out in the article beginning on this page, although production of synthetic staple fiber starts more slowly than that of continuous filament, we can certainly expect it to develop more rapidly.

C. H. Bendigo
Ed'tor

RAYON Is Now CHEAPEST Of Major Textile Fibers

HIGHLIGHTS: *Sharp rise in cotton leaves staple rayon considerably lower in price—Filament rayon is below comparable cotton yarn—Since rayon supply is limited by plant capacity, producers are allocating to customers—Production gain of 9% in poundage this year; 15% gain possible in 1947—Many new plants in prospect both here and abroad—Tire-cord now 50% of viscose filament production—Staple is in for expansion.*

By WILLIAM B. DALL, *Managing Editor, TEXTILE WORLD*

THE EXTRAORDINARY FACT that rayon staple is now the cheapest of the textile fibers (barring the cordage fibers) gives it a position of strength and importance hardly to be expected a few years ago when it was three times the price of raw cotton. In addition to the attractiveness and saleability of fabrics made from 100% spun staple or from blends with cotton, wool, and other fibers, the new price relationship gives the synthetic a new position which the unrestrained optimist might almost call dominance over the field.

When cotton crossed the 20¢ mark in 1943, it became evident that staple viscose rayon at 25¢ was not much higher relatively because of the lesser amount of waste in the synthetic. In early 1946, however, the prices crossed each other; and, with every rise above the 30¢ mark, cotton has been adding to its handicap in "the battle of the fibers." Now rayon staple which has remained at 25¢ is to be compared with cotton at around 35¢.

A spun-rayon single 24s yarn is quoted at 71¢, and a combed cotton single 36s is at 71¼. It is obvious

PRODUCTION OF ITEMS MADE FROM RAYON

(In first quarter of years 1944, 1945, and 1946)

BROAD WOVEN GOODS—1000s of yd.	1944 (1st quarter)	1945 (1st quarter)	1946 (1st quarter)
100% filament-rayon fabrics	294,541	275,971	269,044
Bright viscose taffetas	12,762	9,640	15,025
Pigment viscose taffetas	22,501	21,668	22,395
Acetate taffetas	23,327	21,454	21,510
Cross-dyed taffetas	5,370	5,060	6,884
Twills and serges	34,890	29,290	29,041
Satins	38,511	40,837	39,053
Flat and Canton crepes and faille	22,147	19,218	22,175
French crepes	19,602	21,761	23,219
Marquisettes	10,649	11,139	72,116
Ninons and voiles	9,579	9,537	11,006
Combination crepes	40,657	36,398	38,899
All other, incl. parachute fabrics and sheers	48,672	44,128	16,802
100% spun-rayon fabrics	42,605	44,016	49,958
Poplins, challis, and bedford cords	7,647	7,652	7,068
Twills, serges, etc.	16,075	14,752	10,309
Linen types and flakes	5,901	7,040	7,680
Plied-yarn fabrics	4,873	4,975	7,184
All other	8,109	9,595	17,717
Filament and spun-rayon fabrics	38,049	40,841	46,792
Fujis	11,382	14,178	16,994
Shantungs	7,391	7,641	6,593
All other incl. poplins and failles	19,276	20,022	23,205
Mixture (51% or more rayon)	37,466	40,891	57,559
Rayon and wool	6,306	6,644	7,591
Rayon and cotton	23,240	22,143	36,097
Rayon and other fibers	7,920	12,104	13,871
Pile, upholstery, drapery, and tie fabrics	6,982	8,176	10,198
Estimate to cover mills not reporting	2,961	510	.....
Total rayon broad-woven goods	422,604	416,405	433,551
Nylon, glass, and other fibers	24,000	6,000	.....
KNITTED GOODS—1000s of doz.			
Full-fashioned hosiery for women (doz. pr.) rayon	+8,818	9,147	3,281
Full-fashioned hosiery for women (doz. pr.) nylon			6,081
Seamless hosiery for women (doz. pr.) rayon	+1,838	1,090	918
Seamless hosiery for women (doz. pr.) nylon			552
Half-hose and slacks	+2,909	2,281	.....
Knit underwear and nightwear (doz. garments)	*3,171	.....	.....
Knit fabric gloves circular and warp (doz. pr.)	*333	.....	.....

CONSUMPTION OF RAYON

(Filament, except where specified under broad woven goods)

	1944 (1st quarter)	1945 (1st quarter)	1946 (1st quarter)
	(in thousands of pounds)		
Broad-woven goods—			
Filament	74,600	72,300	81,700
Spun	.....	25,771	29,882
Blends and mixtures	.....	4,826	10,226
Tire cord and fabric	21,100	43,000	53,400
Narrow woven goods	3,600	4,300	3,300
Miscellaneous uses	5,300	3,500	3,400
Exports	2,600	5,700	3,300
Hosiery—full-fashioned	8,000	6,900	2,100
—seamless	3,600	2,700	3,900
Other knit goods—circular	7,200	7,000	7,800
—warp knit	7,000	6,600	8,700

Figures are from WPB, CPA, "Rayon Organon," Dept. of Commerce.
+Average quarterly figure based on all of preceding year.
*Last quarter 1943.

the inelasticity of output of rayon staple, limited as it is to existing plant capacity, that hinders the sale of many millions of pounds of it or that permits cotton to swing into an almost runaway market with growers talking enthusiastically of 40¢ cotton when there is a cheaper and, for some uses, better fiber available.

Back in 1943 and 1944, 150-den. viscose filament rayon was about the same price as a comparable combed cotton 36s. The rayon, unchanged since late 1941 at 55¢, compared with 53½¢ for the 36s in 1942, but it now compares with 71¾¢ for the cotton yarn. Roughly, staple rayon is 28% below cotton; and filament rayon 23% below cotton yarn.

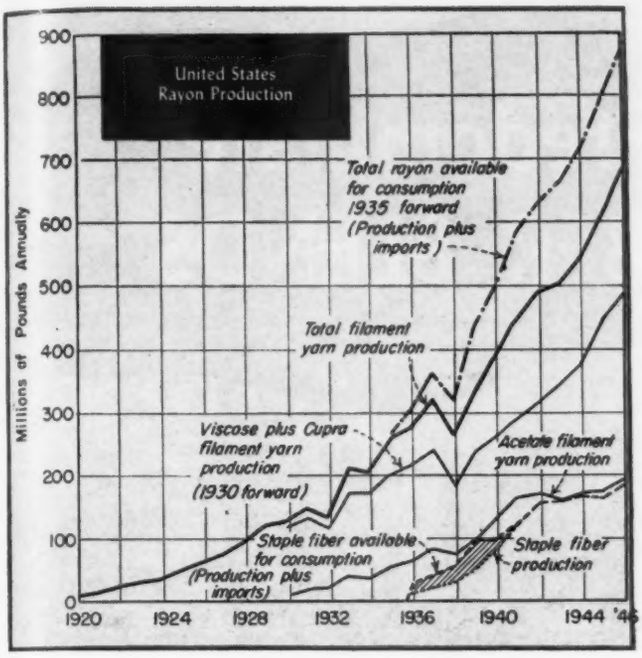
Little wonder that for the present and for a fair period into the future, rayon (and most of the other synthetics) are being handled by their makers on an allotment basis.

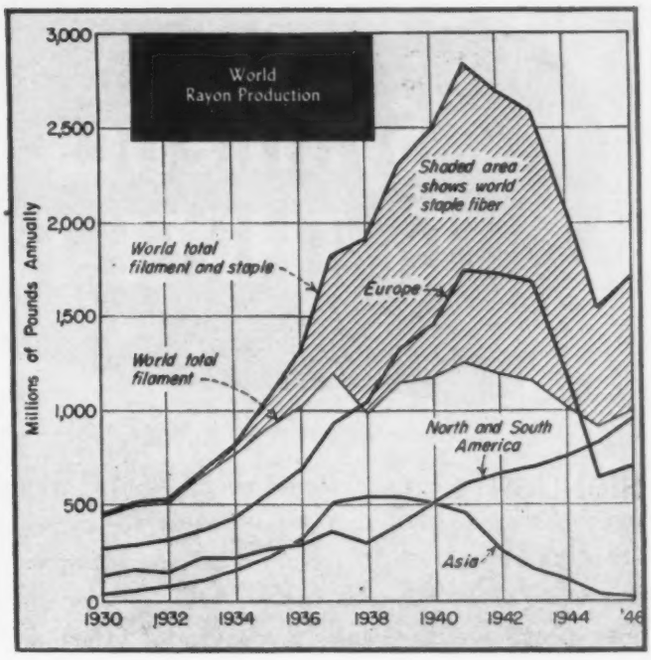
1946 PRODUCTION UP 9%. The steep upward slope of U. S. rayon production curve continues, with estimated output of filament and staple for 1946 coming close to 870,000,000 lb., or 9% over 1945. The latter year was 10% over 1944 and similar gains were the regular thing back to 1938, which was the last year on the record to show a recession from the previous year. There are substantial expansion programs on foot on the part of at least four U. S. companies, which will not come into production until a year or more from now but which suggest a further increase of perhaps 15% by the end of 1947.

World rayon production touched its peak in 1941 and has been declining on an average of about 10% per year through 1945, primarily because of shrinkages in production of Japan, Germany, and Italy. In 1941, U. S. production amounted to only one-fifth of world production; whereas at the present time, it is slightly over half (51%). In 1946, world production figures will turn upward by about 10%; and the increase may be even sharper in 1947, as the devastated countries get back into production and as new enterprises start to manufacture in areas which have not been substantial producers heretofore.

Examples of the latter are the 25,000,000 lb. viscose plant under construction in Brazil to produce 80% filament, 20% staple; another Brazilian project to produce 16,000,000,000 lb.; a 5,000,000 lb. filament and staple mill in Chile; a 2,000,000 lb. plant in Peru; a 10,000,000 lb. filament and staple, continuous-process viscose mill in Cuba; a 2,000,000 lb. plant in Colombia; a plant in Australia; a 5,000,000 lb. plant in Egypt; a 3,000,000 lb. plant in India; a new plant in Venezuela; expansion of plants in the Argentine; several plants in Mexico, both viscose and acetate; substantial increases and new plants in Canada, totaling 24,000,000 lb.; a continuous-process viscose filament and staple plant for Palestine which will employ about 1,000 persons.

With this active growth in view, it is fortunate that the American rayon industry is not built upon a large export business. Only 3¼% of total production of filament yarn was exported in 1945, and only 2% of that production in the first half of 1946. Including the rayon piece goods and garments





exported, foreign trade might account to 10% overall this year.

The non-rayon synthetics—such as nylon, glass, azlon (protein), vinyl compounds, etc.—are also on the upward march. The third nylon plant is about to be erected, and one of the two other plants enlarged. There are three firms in the glass fiber field now, whereas not long ago there was but one. Protein-fiber (azlon) makers are adding to their capacities, and the vinyl extruders are expanding into new and potentially large fields.

FILAMENT RAYON. In filament rayon, the viscose process still holds its dominant position, accounting for about 69% of U. S. production and 75% of world production. Acetate accounts for about 29% of U. S. and 23% of world production. Cuprammonium is about 2% of world production, and nitro-cellulose less than 1%.

In this country, acetate production has run along through the war years of 1941 to 1945 with little definite change in volume, while viscose over the same period gained 66%. This disparity was due in greatest part, as has been pointed out before in these reviews, to the wartime pressure for tire-cord of high-tenacity viscose, and the priorities given in building plants for this purpose. The tire-cord use of this rayon has not ended with the close of hostilities; in fact tire-cord rayon delivered from January to June this year was at a rate 13% greater than the average rate for 1945. The relative importance of tire-cord rayon is evident when it is noted that of the total production of 241,800,000 lb. of viscose plus cupra (usually reported together to avoid disclosure of the one active cupra manufacturer) for the first half of 1946, 106,200,000 lb. was delivered to tire manufacturers. This tire-cord portion is 45% on those figures, which actually means approximately 50% of the viscose production taken alone.

Because of the continuing importance of tire-cord rayon, the heavy deniers (1,000 and over) take the lion's share of viscose poundage and account for nearly half in 1945, after rising from a negligible figure in 1939 and less than 2% in 1940. The most important light denier in viscose production in 1945 was 150, which accounted for 20%; this denier has always been a leader, accounting for about 50% in nearer years and for 75% before 1930. In 1945, the finer filaments (75 and lower) were only 8% of the viscose-yarn poundage.

In filament acetate, 75 den. was the most popular, reaching 30% of production in 1945. The next in volume was 150 den. with 21%. From 1936 to 1942, the 150 den. was the dominating size; although in 1934 and 1935, 100 den. took first place.

STAPLE FIBER. It was the experience in the Axis countries, before their setback, that staple fiber develops later than filament but grows relatively faster. Such seems to be the pattern for staple fiber in this country, as there are new plants and enlargements now in progress which will add nearly 30% to the current rate of production by the end of1947. Actually development of staple was held back in this country by the war. Once the war got fully underway, there was practically no increase in staple-fiber production. Much potential staple production went, uncut, into filament yarn for tire cord. The following figures on annual staple production indicate a slight carryover of the upswing from peacetime into wartime, with an ensuing flattening out: 1941, 122,000,000 lb.; 1942, 153,300,000; 1943, 162,000,000; 1944, 168,700,000; 1945, 168,400,000. The upswing is being resumed this year with a probable production for 1946 of 182,000,000 and for 1947 of well over 200,000,000.

Acetate staple fiber has been making relative gains in recent years, coming up from about 11% of the total staple in 1938 to 24% in 1944 and 1945. As most of the prospective increase in the next few months will be in viscose staple, this percentage relation seems bound for a decline, though there will doubtless be a substantial gain in poundage output.

Filament rayon stocks at the end of July were 8,000,000 lb., a relatively low peacetime figure, for in the years 1930 to 1941 that figure ranged from a low of 3,200,000 to a high of 67,800,000 with about 20,000,000 a fair average. These figures were compiled by *Rayon Organon* which, with the Department of Commerce, is the source of most of the figures used in this survey. Stocks of rayon staple at the end of July were 2,000,000 lb., which is lower than any annual monthly average since 1939. Earlier than that, the total production was relatively so small as to make direct comparison misleading.

Synthetics Predominate In THREE-FIBER BLENDS

22nd ANNUAL SYNTHETICS NUMBER

HIGHLIGHTS: *Novel three-fiber blends use synthetics almost exclusively and are produced on a great variety of cotton-system equipment—Table on pages 106, 107 shows organizations, settings, speeds, methods recommended by mill men for five selected production blends and one experimental blend—Greater production of longer synthetic staples may come, as is indicated in suggested layouts.*

By C. MALLARD BOWDEN, *Southern Editor, TEXTILE WORLD*

MANY BLENDS of three fibers on the cotton system of spinning or on special rayon equipment employ at least two synthetic fibers, one of which is the base or carrying fiber in the blend; and frequently the blends employ three synthetic fibers. When limited to novelty yarns for special effect, the multiple-fiber blends require a considerable amount of compromise in the selection of processes, machine settings, and organization of drafts and numbers. Because such blends are relatively new, particularly blends of longer fibers, the present technical data available from the mills is highly varied and, without proper perspective in the analysis, is likely to be misinterpreted.

It should be emphasized, therefore, that processing techniques for the extremely varied and interesting synthetic blends shown on pages 106 and 107 are in the development stage and that the variety of methods shown record a stage of development. The methods listed were submitted by mill men themselves from experience obtained on equipment which is constantly undergoing refinements and change as the mills expand their use of synthetic fibers. Judged individually, therefore, the organizations shown in the table are not perfect, but they do permit analysis of the versatile background of complex synthetic blends.

VARIED EQUIPMENT. To mention but one development in this period of intense textile development of synthetic blends, there is the choice between standard cotton-system processing and special rayon processing equipment. Yet, this choice is not absolute, for some mills interested in special rayon equipment for longer staples have not yet received such equipment. And there are mills which have but a small amount of special rayon equipment with which they supplement standard cotton equipment; and so-called "rayon" equipment is used interchangeably in some cases for cotton, wool, flax, and synthetics. Finally, there are mills which process cotton and synthetics, or wool and synthetics, on conventional equipment designed to handle short-staple fibers.

The methods shown are not intended to be used as hard and fast methods of procedure. Their interest lies exclusively in the fact that in this period of multiple-fiber blends there are so many different methods to produce blends of generally similar characteristics. As such, they may be useful to the mill executive who is now thinking of multiple synthetic blends in terms of the equipment he is using or wants to use.

One further reason for the lack of standardization in such synthetic blends is the fact that yarn and fabric development departments of the mills are constantly seizing upon a new or improved characteristic of a fiber and are utilizing this characteristic in yarn or cloth. The great variety of methods shown, then, will be of special interest to mills who wish to see how progressive men have obtained these effects in the past. And for their future guidance, they can rely on the imagination of the textile engineer limited only by the chemical structure of the new fiber and the mechanical aspects of their equipment.

FIBERS BLENDED. Rayon, nylon, Aralac, Vinyon (in experimental quanti-

Ordinary two-fiber blends — cotton and a synthetic, wool and a synthetic, or two types of synthetics — are by now well known; and the running of staple synthetics on cotton, wool, or special equipment have been treated in detail in past issues of TEXTILE WORLD. The newest development of multiple-fiber blends, at present mainly three-fiber, is capturing the imagination of the industry. The luster of bright viscose, the unique dyeing properties of acetate, the strength of nylon, the resiliency of Aralac, the bonding properties of Vinyon can be used in the proportions needed with themselves or with natural fibers to get particular effects wanted. This article tells how mills are successfully spinning blends of three fibers.

ties), and other synthetics have been blended with wool, cotton, silk, flax, and other synthetics, in infinite variety of denier, staple length, and number of fibers in the blend. Up to four fibers were reported in blends which used from 1.25 den. to 8 den. and from 1½-in. staple to 3-in. staple. Blending techniques range from sandwich blends after opening to a spinning blend of a Vinyon cover over a filament ground-yarn (see experimental blend No. 5).

From a variety of three-fiber blends submitted by mill men, the blends shown under Method No. 1 were selected and sent to other mills for criticism. From the second submission of technical details, there arose the range of blending methods, yarn organizations, and card settings shown in the subsequent columns.

BLENDING METHODS. A considerable use of the sandwich blend has been made in the various methods submitted, because mill men believe that the sandwich mix, either before or after the opening process, offers the best method of preparation. Some alternate methods were suggested, such as the use of the finisher picker for blending.

Storage for "conditioning" of fibers was recommended by most mills, although some mill men stated that none was done at their plants. It is interesting to note that of the methods suggested, fiber storage occurred first in three of the suggestions and was placed third in the processing by Method No. 1.

Breaker picker, two-beater or three-beater rayon pickers, ordinary one-process pickers, and finisher pickers comprise the machines suggested for picking equipment. These were suggested in various sequences and forms: breaker picker with a finisher, 2-beater rayon picker with a finisher, 2-beater or 3-beater rayon picker alone, single one-process 3-beater picker, and one-process 3-beater picker in conjunction with finisher picker.

On the whole, therefore, the picking operation is somewhat more extensive for the three-fiber blends than for simpler blends of synthetic fibers. The opinion of mill men was that thorough picking and lap-preparation was absolutely necessary for complex blends, and this opinion was given further substantiation by criticism of mill men to whom the layouts were submitted.

Card settings were also extremely varied, and some were a bit wider than heretofore encountered. The wide settings shown in the various methods were said to be necessary to the processing of the blends for the special uneven or other effects desired in the yarns. Wide settings were encountered on layouts processing spun nylon; but insofar as nylon fiber is concerned, one mill stated the common-sense view that the supply of nylon fiber has been too small to expect a great degree of standardization in technical details.

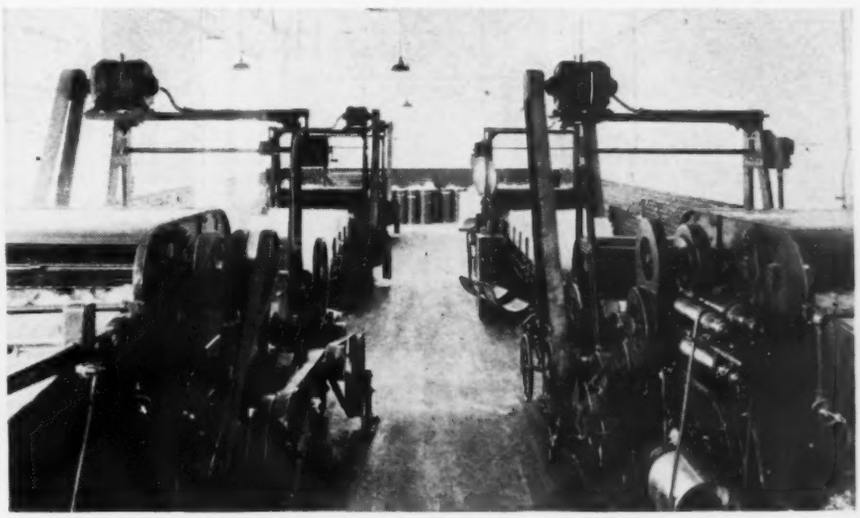
Multiple processes in drawing and in roving were well represented in the returns. However, special rayon equipment was said by several authorities to be used at drawing, roving, and spinning for the complex blends and for longer fibers, hence the use of shorter roving processes and higher drafts. Conventional spinning with self-weighted top rolls was used extensively although, as already indicated, there is no hard and fast rule to follow in scheduling either roving or spinning numbers for novelty blends.

Because the trend of such multiple blends is always toward the new or the special effect, a description of an experimental blend is included. This experiment, run in a pilot mill, uses Vinyon and 2-in. Aralac in a blend which is spun on conventional spinning with a ground yarn of undrafted filament rayon. This experimental blend is shown in blend No. 5 as an illustration of the type of development work which sooner or later will intrigue the mill man who is now considering synthetics for multiple-fiber blends.

(*Continued on following pages*)

Tires Use 212,000,000 Lb. of Rayon

"Rayon has been proved the strongest cord for truck tires," says Goodyear Tire & Rubber Co. when showing this largest truck tire the company ever built. Rayon cord is now permitted in sizes as small as 6.50 (large passenger-car size) but cannot be used in the popular 6.00 size as yet because of the shortage of rayon. At present half the production of viscose rayon goes into tire cord. Tire being examined here by J. E. Mayl, Goodyear vice president, is made from "heavy-gage rayon," undoubtedly the newer 2,200 den. which is being favored over the 1,100 den.



Breaker and finisher pickers were recommended by mill men for preparing laps of complex synthetic blends. Some mills, however, recommended 2-beater rayon pickers; and others suggested regular one-process pickers.

	Opening and picking for specified blends	ORGANIZATIONS			
		Bale feeder Feed table Fiber storage Conditioning Sandwich blend 2-Beater rayon picker Finisher picker	Fiber storage Sandwich blend Bale feeder Breaker picker Finisher picker	Fiber storage Conditioning Weighing-out Battery hopper feeders One-process picker (Mechanical weighing and blending aids were also used.)	Fiber storage Conditioning Weighing-out Mixing picker Finisher picker
		Method No. 1	**No. 2**	**No. 3**	**No. 4**
BLEND NO. 1 Acetate-viscose-acetate	80% 1½-den., 1-9/16-in. br. viscose 15% 4-den., 1½-in. acetate 5% nubby acetate	Card 55 gr. (0.15 hank) Drawing 55 gr. Drawing 55 gr. Slubber 0.50 hank Intermediate 1.00 hank *Speeder 2.50 hank Spinning 17.50 Tw. mult. 0.85, 1.00, 1.15, 3.60 Conventional spinning, self-weighted top roll	Card 55 gr. (0.15 hank) Drawing 60 gr. Drawing 60 gr. Slubber 0.60 hank Intermediate 2.40 hank Spinning 15.00 Tw. mult. 0.80, 0.90, 3.70	Card 50 gr. Drawing 50 gr. Drawing 50 gr. L-D roving 2.00 hank L-D spinning 15.00 Tw. mult. 0.95, 3.60	Card 50 gr. Drawing 50 gr. Drawing 50 gr. Slubber 1.20 hank Spinning 12.50 Tw. mult. 1.00, 3.6
BLEND NO. 2 Viscose-acetate-Aralac	60% 4-den., 1-9/16-in. br. viscose 25% 1½-den., 1½-in. dull acetate 15% blend 58s wool and Aralac Pre-open wool and blend with Aralac on finisher picker, return laps for blending with mix.	Card 55 gr. (0.15 hank) Drawing 55 gr. Drawing 55 gr. Slubber 0.45 hank Intermediate 1.50 hank Speeder 3.80 hank Spinning 26.00 Tw. mult. 0.80, 0.95, 1.10, 3.50	Card 60 gr. Drawing 60 gr. Drawing 60 gr. †Rayon roving frame 2.20 hank Conv. speeder 4.50 hank Spinning 33.00 Tw. mult. 0.85, 1.05, 3.40	Card 50 gr. Drawing 50 gr. Drawing 50 gr. L-D roving 2.00 hank Speeder 4.00 hank Spinning 30.00 Tw. mult. 1.05, 1.20, 3.40	Card 50 gr. Drawing 52 gr. Drawing 52 gr. †Rayon roving 2.0 hank Spinning 22.00 Tw. mult. 1.10, 3.5
BLEND NO. 3 Nylon-viscose-Aralac	60% 3-den., 2-in. nylon 30% 3-den., 1-9/16-in. viscose 10% 60s 2-in. Aralac	Card 60 gr. Drawing 65 gr. Drawing 65 gr. Slubber 0.45 hank Intermediate 1.35 hank Speeder 4.20 hank Spinning 33.00 Tw. mult. 0.70, 0.85, 0.95, 3.00 Conventional spinning, self-weighted top roll	Card 50 gr. Drawing 50 gr. Drawing 50 gr. Slubber 0.55 hank Intermediate 2.10 hank Speeder 6.00 hank Spinning 38.00 Tw. mult. 0.70, 0.80, 0.90, 3.00 Conventional spinning, self-weighted top roll	Card 55 gr. Drawing 57 gr. Rayon roving 2.50 hank Spinning 20.00 Tw. mult. 1.10, 3.10 Rayon attachment for spinning	Card 50 gr. Drawing 50 gr. Slubber 1.60 hank Speeder 4.00 hank Spinning 30.00 Tw. mult. 1.00, 3.25 Self-weighted top roll in spinning
BLEND NO. 4 Viscose-acetate-viscose	65% 3-den., 1-9/16-in. br. viscose 25% nubby acetate 10% 1½-den., 1½-in. dull acetate	Card 55 gr. Drawing 55 gr. Drawing 55 gr. Slubber 0.50 hank Intermediate 1.20 hank Speeder 3.20 hank Spinning 19.00 Tw. mult. 0.85, 0.90, 1.00, 3.70 Self-weighted top roll spinning	Card 55 gr. Drawing 60 gr. Drawing 60 gr. Slubber 1.20 hank Spinning 14.00 Tw. mult. 0.85, 3.75 Self-weighted top roll in spinning	Card 60 gr. Drawing 60 gr. Drawing 60 gr. L-D slubber 2.00 hank Spinning 15.00 Tw. mult. 1.10, 3.60 L-D spinning	Card 55 gr. Drawing 60 gr. Drawing 60 gr. Rayon roving 1.80 hank Rayon spinning 15.00 Tw. mult. 1.05, 3.50
BLEND NO. 5 Aralac-Vinyon-viscose	(Experimental) 80% 60s 2-in. Aralac 20% 3-den., 2-in. Vinyon Blended at spinning with viscose filament or cotton ground yarn of approximately same size.	Card 55 gr. Drawing 60 gr. Drawing 60 gr. Slubber 0.50 hank Intermediate 1.30 hank Speeder 2.60 hank Spinning 21.00 Tw. mult. 0.70, 0.80, 3.60 Special rayon equipment in spinning—middle roll weight removed on speeder	Note—No other methods reported for this experimental blend of Aralac and Vinyon. In this method, Vinyon and Aralac were processed as follows: blending feeder, fiber conditioning, sandwich mix, breaker picker, finisher picker. Roving was spun into 21s yarn on the spinning frame where an undrafted filament ground-yarn of similar size was combined with the yarn. The ground yarns were creeled on cones, run through special roving-traverse guides, by-passing the first and second drafting rolls, and fed into the front roll.		
BLEND NO. 6 Viscose-acetate-Aralac	60% 3-den., 2½-in. viscose 20% 4-den., 2½-in. acetate 20% 60s 2½-in. Aralac Method No. 1 includes combination at twisting with 100% spun-nylon yarn to make 40/2. Methods 2 to 4 do not include combining.	Card 50 gr. Drawing 55 gr. †Rayon roving frame 2.50 hank Spinning 20.00 Tw. mult. 1.10, 3.50 Self-weighted top roll	Card 50 gr. Drawing 50 gr. Drawing 50 gr. Slubber 0.90 hank Intermediate 2.80 hank Spinning 20.00 Tw. mult. 0.80, 1.10, 3.50	Card 55 gr. Drawing 60 gr. Drawing 60 gr. Rayon roving 2.00 Spinning 15.00 Tw. mult. 1.05, 3.50 Rayon spinning	Card 50 gr. Drawing 55 gr. Drawing 55 gr. Rayon roving 2.00 hank Spinning 17.50 Tw. mult. 1.10, 3.50 Special rayon spinning

When conventional processes are indicated for longer staples, either new stands have been installed or the mill has resorted to slip draft, uses "jump" saddles, removes middle roll-weights, and/or installs some form of self-weighted middle roll.

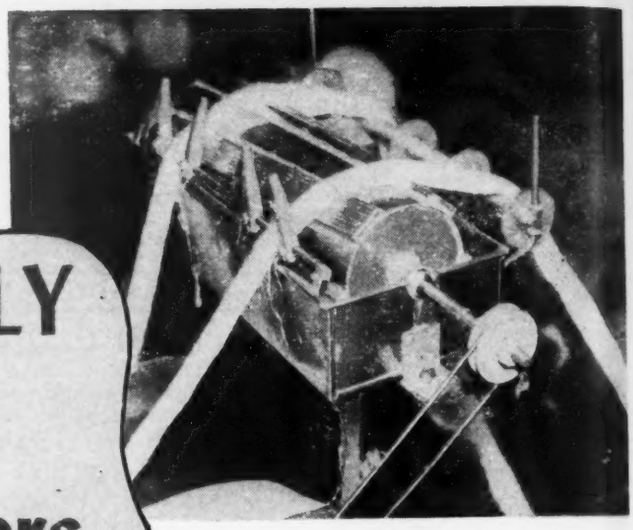
FOR THREE-FIBER BLENDS

SETTINGS AND SPEEDS			COMMENTS
	Beater speeds 320 to 700 r.p.m. Beaters set for longest staple in blend Card cylinder screens front 1/16 to 3/16 in. Card cylinder screens middle 0.025 to 0.060 in. Card cylinder screens back 0.015 to 0.030 in.		Only one front-beater speed reported as 700 r.p.m. Most speeds were down to 320- to 500-r.p.m. range. All beater settings were wider than for simple blends, and cylinder screens were generally standard.
Roller-top card	**Revolving-flat card**	**Revolving-flat card**	
	Doffer/cylinder 7/1000 in. Flats/cylinder 34/1000 in. Lickerin/fd. plate 16/1000 in. Lickerin/cylinder 10/1000 in. Lickerin speed 260 r.p.m. Flats speed 1 in. per min.	Doffer/cylinder 7/1000 in. Flats/cylinder 16/1000 in. Lickerin/fd. plate 22/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 250 r.p.m. Flats speed 2 in. per min.	Wide settings used in attempt to preserve the coarse, uneven effect desired in this blend. Short drafts with multiple processing in opening, picking, drawing, and roving used, along with longer drafts and minimum processing. Both were said to produce essentially coarse-grained yarns.
orker/cylinder 10/1000 in. orker/stripper 16/1000 in. ipper/cylinder 10/1000 in. workers rolling offer comb 18/1000 in. linder/doffer 1000 in. ickerin/fd. plate 12/1000 in. ickerin/cylinder 7/1000 in. orker speed 7 r.p.m. ipper speed 310 r.p.m.	Doffer/cylinder 7/1000 in. Flats/cylinder 14/1000 in. Lickerin/fd. plate 12/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 300 r.p.m. Flats speed 2 in. per min.	Doffer/cylinder 7/1000 in. Flats/cylinder 12/1000 in. Lickerin/fd. plate 12/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 250 r.p.m. Flats speed 3 in. per min.	Some mill men preferred the multiple processes in Method No. 1 for this complex blend. Some pointed out that closer card settings would improve the blending, and recommended 10/1000 in. for flats. Roller card recommended also.
	Doffer/cylinder 7/1000 in. Flats/cylinder 16/1000 in. Lickerin/fd. plate 20/1000 in. Lickerin/cylinder 10/1000 in. Lickerin speed 250 r.p.m. Flats speed 2 in. per min.	Doffer/cylinder 7/1000 in. Flats/cylinder 20/1000 in. Lickerin/fd. plate 20/1000 in. Lickerin/cylinder 10/1000 in. Lickerin speed 290 r.p.m. Flats speed 2 in. per min.	Wider settings were favored because of nylon character and length of staple.
orker/cylinder 10/1000 in. orker/stripper 15/1000 in. ipper/cylinder 10/1000 in. offer comb 16/1000 in. linder/doffer 7/1000 in. ickerin/fd. plate 16/1000 in. ickerin/cylinder 7/1000 in. orker speed 8 r.p.m. ipper speed 325 r.p.m. ickerin speed 290 to 350	Doffer/cylinder 7/1000 in. Flats/cylinder 38/1000 in. Lickerin/fd. plate 22/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 250 r.p.m. Flats speed 1 in. per min.	Doffer/cylinder 8/1000 in. Flats/cylinder 22/1000 in. Lickerin/fd. plate 12/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 290 r.p.m. Flats speed 2 in. per min.	Very wide settings were said to be necessary to preserve the coarse quality desired in the blend. Roller card recommended as aid to blending.
		Doffer/cylinder 7/1000 in. Flats/cylinder 10/1000 in. Lickerin/fd. plate 30/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 250 r.p.m. Flats speed 1 in. per min.	Picker beater speeds were 320 and 400, back and front Kirschners. Fiber mixed at picker, after one mild opening process.
orker/cylinder 10/1000 in. orker/stripper 16/1000 in. ipper/cylinder 10/1000 in. offer comb 18/1000 in. offer/cylinder 7/1000 in. ickerin/fd. plate 17/1000 in. ickerin/cylinder 7/1000 in. orker speed 7 r.p.m. ipper speed 300 r.p.m. ickerin speed 290 to 350	Doffer/cylinder 8/1000 in. Flat/cylinder 12/1000 in. Lickerin/fd. plate 56/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 290 r.p.m. Flats speed 1 in. per min.	Doffer/cylinder 10/1000 in. Flats/cylinder 12/1000 in. Lickerin/fd. plate 34/1000 in. Lickerin/cylinder 7/1000 in. Lickerin speed 250 r.p.m. Flats speed 1 in. per min.	One mill man recommended roller-top card for this staple length, and others stated that the choice between roller or flat was optional. Mild carding was recommended for flat-top cards.

† *" Rayon " equipment is used advisedly. Some types of so-called " rayon " assemblies are used for cotton, wool, and synthetics of short and long staple lengths.*

22nd ANNUAL SYNTHETICS NUMBER

TINTING and FLY Plague Bradford Spinners Using Rayon



After applying emulsion and tint to wool top, it is stored for a few days.

HIGHLIGHTS: *Blending wool and rayon on gilling machine aided if rayon can unroll freely—One gilling sufficient for blend—Minimum twists recommended.*

By FRANCOIS E. CLEYN, *Consulting Editor, TEXTILE WORLD*

COTTON MACHINERY has taken the lead in blends using synthetics, but the Bradford system with its facilities to use long fibers will continue to have a place. The most widely used blend is rayon and wool, which has proved itself for the manufacture of woven and knitted fabrics.

The most generally used raw material is combed rayon tops of various uniform fiber lengths or with fibers of variable lengths, matching the draw of a wool top. This raw material can be blended with dyed wool tops to be used in mixture fabrics, or else with white wool tops to be used for piece-dyed fabrics. If for piece-dyed fabrics, the first problem is to find a method to keep the blends strictly separated from all-wool lots going through the mill at the same time. Fugitive dyes are the answer to this difficulty; and if rayon tops could be readily purchased in various tints, more worsted spinners would make experiments with them. In the absence of tinted rayon-tops, the wool has to be tinted.

TINTING WOOL. It is most practical to give the wool tops earmarked for blending a preliminary gilling operation for the purpose of tinting the sliver. A balling head intersecting mixing gill is a most suitable machine; tinting and applying the emulsion are done on it. After the emulsion and tint is applied, it is advisable to store the wool tops for a few days. When they are blended with rayon, it is not necessary to give the wool any other oiling. Keeping oil away from rayon is always advisable.

The gilling operation on which the blend is produced is the most important step in the whole process. A special stand can be used to allow the rayon sliver to unroll freely without inserting too much twist. The rayon sliver should be placed on the creel in such a way as to be in the middle of the delivery sliver, with the wool ends on the edges.

As far as the gill box itself is concerned, several minor changes are advisable and should be made according to the type blend that is being processed. See articles by Drenner and Boswell in the December, 1945, and January, February, and March, 1946, issues of TEXTILE WORLD for information concerning faller pinnings, the right type of funnels, and other ideas useful in running rayon on worsted machinery. [Reprints are available—Editor.]

The mere fact that rayon-and-wool blends are successful on cotton machinery, on which no gilling operations are used, seems to indicate that one gilling operation is sufficient for the blend. On the Bradford system, this operation will have to be a spindle-gill-box operation. In other words, if the procedure outlined is followed, the wool tops will have been gilled once by themselves and once in the blend.

RATCH AND TWIST. From the first draw box to the spinning, ratch and twist are the two big problems. The drawing foreman who has been used to testing wool slivers all his life is bound to make some mistakes, and very often blends are discarded in a mill because the first experiments are unsuccessful through lack of experience. However, principles remain basically the same; and a minimum amount of twist should be used. As far as the ratch is concerned, best results come from ratching to the rayon, since the longest wool fibers are approximately of the same length as the rayon fibers.

Viscose-rayon fiber which flies about the mill is one of the greatest problems which face the spinner. Controlling this fly is particularly difficult to overcome in a small- or medium-size mill in which partitioning is difficult or sometimes impossible.

Synthetics Broaden Variety of FABRICS

HIGHLIGHTS: *Novel effects easily achieved—Trend is away from simple weaves—Nylon blend may resist wrinkling—All-synthetic fabric for persons allergic to wool.*

By T. R. HART
School of Textiles, N.C. State College

THE DEMAND for spun-rayon fabrics has grown tremendously in recent years, and the consumption of staple fiber will continue to increase. By blending fibers with widely different characteristics, technicians are able to develop fabrics that have the strength, softness, porosity, and resilience desired for any given purpose. Viscose rayon can be blended with practically any fiber

(Continued on next page)

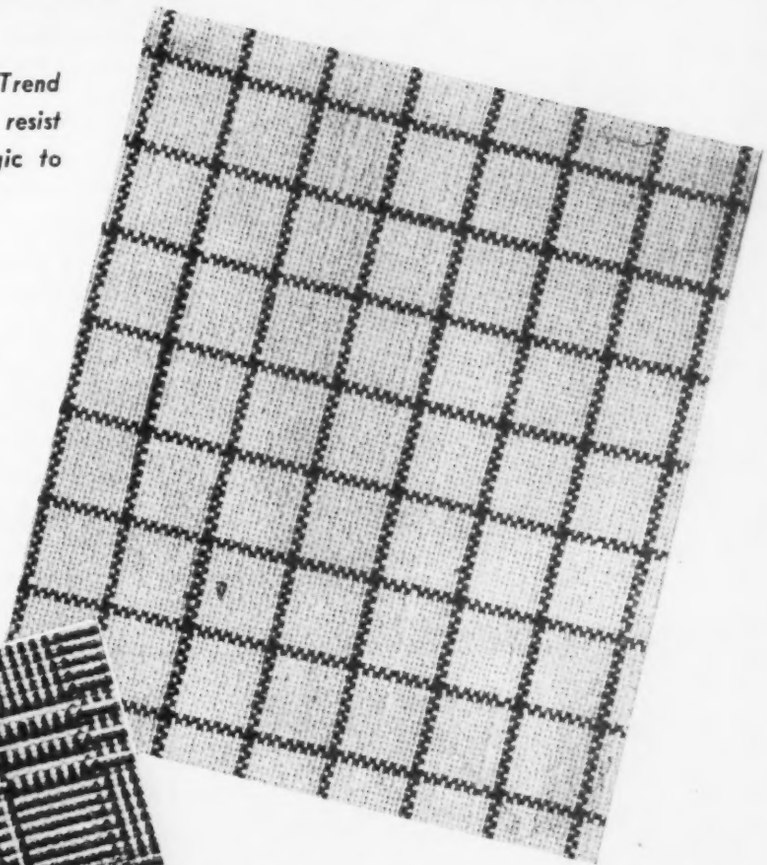


Fig. 1. Tiber cloth (a Dan River fabric) is a butcher-linen type of cloth made from cotton and rayon. It is vat dyed, crease resistant, and Sanforized. The finished construction is approximately 36 x 32. A mechanical slub viscose yarn of rather coarse count is twisted with a comparatively fine cotton yarn in making both the warp and the filling.

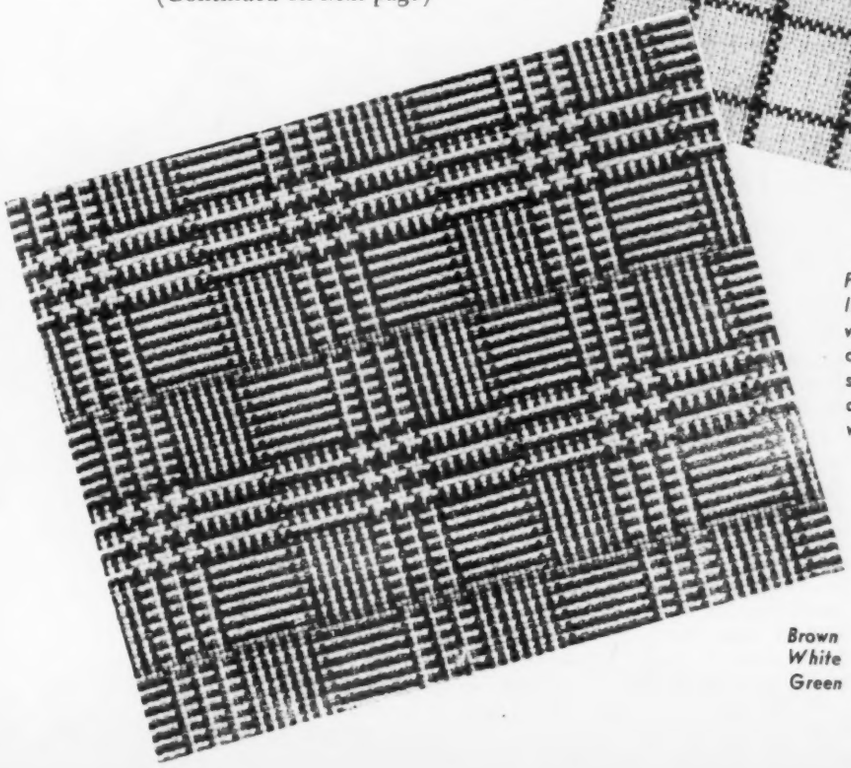


Fig. 2. A neat color effect achieved with both warp and filling of 26/2 spun rayon. It was woven with a 28-dent reed and has 62 picks per inch. The ground is a 2 and 2 basket weave. The ends and picks are arranged as follows:

Brown	2	2	2	2	2	2	4	4	4	4	2	2	2	2	2	2
White		2	2	2	2	2	2	4	4	4	2	2	2	2	2	2
Green																4

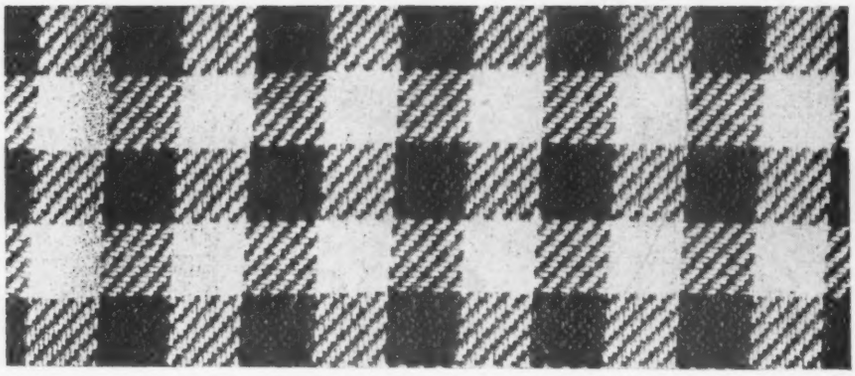
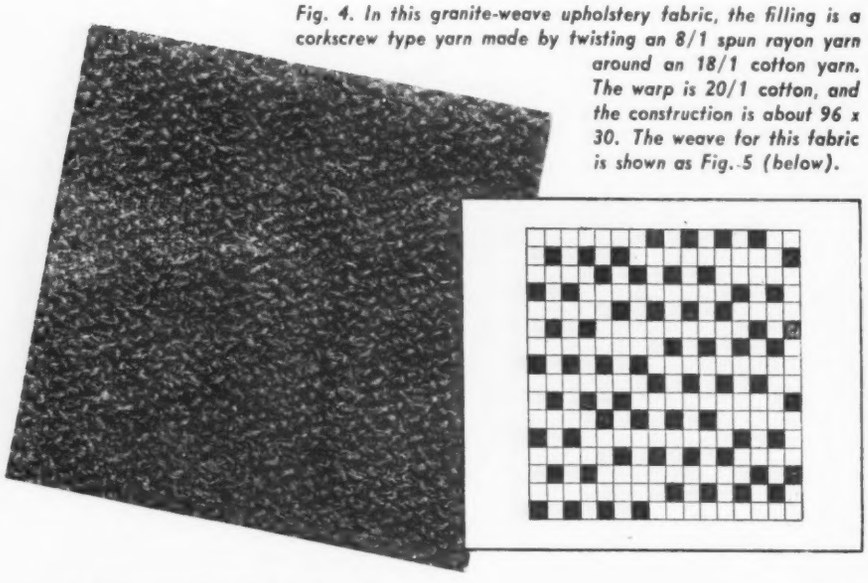


Fig. 3. This fabric utilizes a 50-50 blend of Aralac and acetate. The weave is a 2/2 twill, and the yarn counts approximate 20/2. It was woven with a 20-dent reed and contains about 38 picks per inch. The warp is arranged 16 white, 16 red. The filling was inserted 14 white, 14 red. The fabric looks and feels a great deal like wool. (Useful for persons allergic to wool.)

Fig. 4. In this granite-weave upholstery fabric, the filling is a corkscrew type yarn made by twisting an 8/1 spun rayon yarn around an 18/1 cotton yarn. The warp is 20/1 cotton, and the construction is about 96 x 30. The weave for this fabric is shown as Fig. 5 (below).



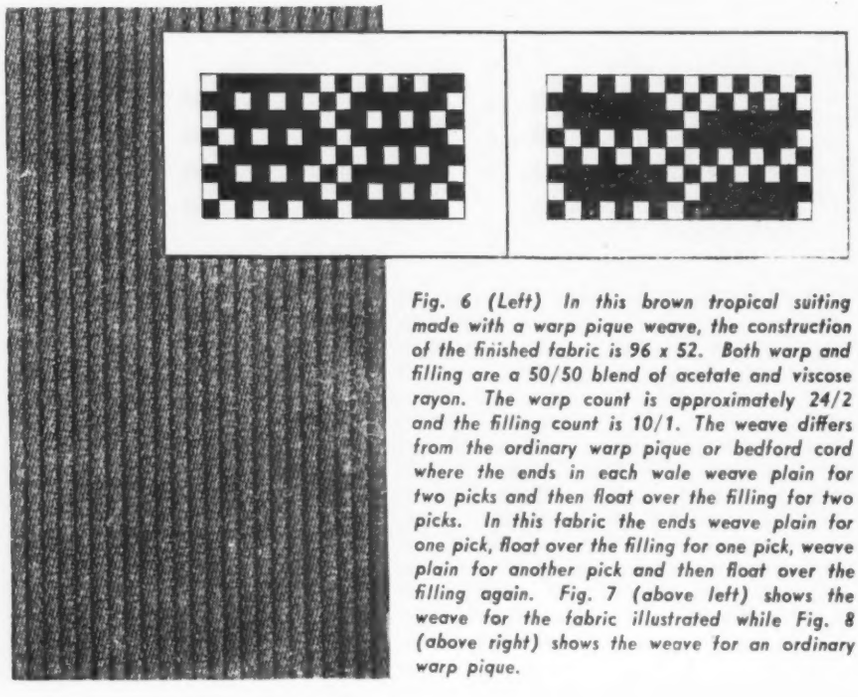


Fig. 6 (Left) In this brown tropical suiting made with a warp pique weave, the construction of the finished fabric is 96 x 52. Both warp and filling are a 50/50 blend of acetate and viscose rayon. The warp count is approximately 24/2 and the filling count is 10/1. The weave differs from the ordinary warp pique or bedford cord where the ends in each wale weave plain for two picks and then float over the filling for two picks. In this fabric the ends weave plain for one pick, float over the filling for one pick, weave plain for another pick and then float over the filling again. Fig. 7 (above left) shows the weave for the fabric illustrated while Fig. 8 (above right) shows the weave for an ordinary warp pique.

—wool, acetate, cotton, flax, ramie, animal hair, Aralac, Vinyon, nylon, and even asbestos. As a matter of fact it acts as an excellent carrier. The outcome of the many possible blends and of their twist variations translates itself into a wide variety of fabrics each with a different handle.

The foregoing paragraph represents a statement made during the recent advanced seminar on rayon at Marcus Hook, Pa., which will be more true than ever as the industry learns more about blends.

Since the purpose of this article is to show some of the novel effects produced either partly or entirely of spun rayon, no effort will be made to discuss blends in detail. However, it is interesting to note the possibility of producing fabrics for men's wear which will not wrinkle and in which the crease can be set so that the garments will not have to be pressed repeatedly —by blending a large percentage of crimped staple nylon with wool.

Up to the present, spun-synthetic fabrics have been made mostly in simple weaves, such as plains or twills, but occasionally a designer adds to the attractiveness of his product by introducing a novelty weave or a good color scheme. On these pages are shown only a few of the many spun-synthetic fabrics which can be made.

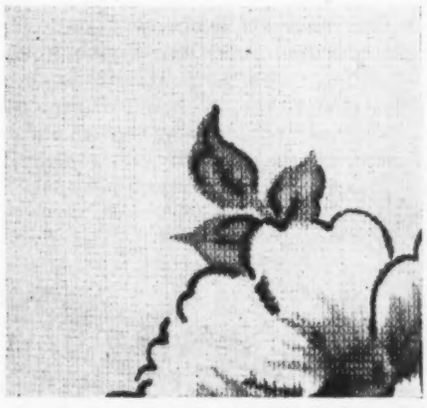
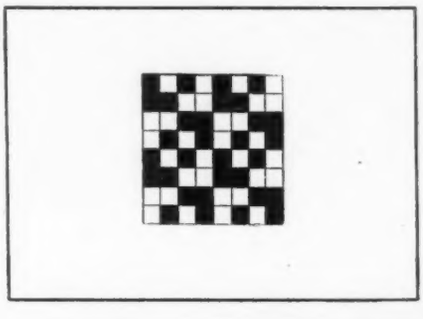


Fig. 9. A jersey effect is obtained in this fabric which has a design printed upon it. The warp is filament rayon, and the filling 2-in. staple spun rayon. Construction is approximately 108 x 76. The weave is shown at Fig. 10 (below).



Techniques Standardized for Finishing MIXED FABRICS

HIGHLIGHTS: *Preparation, dyeing, and finishing can be considered together for four main classes of cotton and viscose; viscose and acetate; viscose and wool or Aralac; viscose, acetate, and wool or Aralac—Proportions of synthetics used is increasing, as is trend to more mixed fabrics.*

22nd ANNUAL SYNTHETICS NUMBER

By C. NORRIS RABOLD
Consulting Editor, TEXTILE WORLD

MORE DIVERSIFIED FIBER COMBINATIONS are to be found today than ever before in the fabrics handled by cotton finishing plants. While synthetic and natural fibers have long been employed in mixed constructions and blends, some of the earlier combinations were none too satisfactory.

Although the value of blending natural and synthetic fibers from the standpoint of giving body, resiliency, stability, and other properties to a fabric was recognized, it was often true that the quantity of fiber so used was blended in too small a proportion to accomplish the desired result.

Within the last few years, we have had available a wider variety of synthetic fibers in different deniers in such forms as cut staple, crimped and uncrimped, and in various degrees of luster, ranging from bright through semi-bright to fully delustered fibers.

We now know more about the properties of the various synthetic fibers; and we know too, much more about fabric construction. As a result, fabrics today made of mixed yarns and blended fibers present, in general, less of a problem largely because they fall into definite groups.

GROUP 1. Cotton and spun or filament viscose fabrics are often made with an all-cotton warp and a spun-viscose filling. Other constructions include a plied cotton-and-viscose warp and filling; plied yarns only in the warp, the filling consisting entirely of spun viscose; an all-cotton warp with a filament-viscose filling.

GROUP 2. A second group consists of blended-yarn fabrics used largely for shirtings and dress goods, containing either a filament viscose or acetate warp with a spun viscose filling.

GROUP 3. Many fabrics used largely for slacks and suitings are made of blends of spun viscose and wool or spun viscose and Aralac. The wool and Aralac may be present in proportions ranging from 15% to 40%, and impart to the fabric body and resiliency. Blends of spun viscose and acetate are also woven for much the same purpose.

GROUP 4. Another group of blends consists of a base of spun viscose with either Aralac or wool as well as acetate staple incorporated along with the spun viscose in varying proportions. In this group, pleasing effects are produced by dyeing the different combinations in various shades.

On the following three pages are given procedures whereby fabrics falling into these four groups can be prepared, dyed, and finished.

Heavy, Suede, Anti-Crease Finish

I. G. Farben in Germany found a means to shrink spun-rayon fabrics chemically before applying a resin finish. The resulting cloth has a heavy suede effect and it can be made crease resistant and water repellent. The finish, which is in the development stage, is reported in FIAT Final Report No. 550 by Glenn D. Jackson, Jr.

After complete desizing, spun-rayon cloth is passed through 9° Be. cold potassium hydroxide solution two to four times. A hot and a cold rinse follow, after which the cloth is put through a cool nitric acid solution (10 to 15% by volume) two to four times. A long cold rinse and, if necessary, soda-ash neutralizing are next.

Following the foregoing, crease-resistance and water-repellency finishes are applied in one bath. Melamine resin is used for crease resistance and ethylene urea (Peristal VS) for durable repellency. Urea formaldehyde resin can be used in place of melamine, or both can be used to add abrasion resistance.

PREPARATION

GENERAL OPERATIONS

SINGEING, DESIZING, BOILING-OFF, BLEACHING, DRYING

GROUP 1 (Cotton and viscose)

Singe: One or both sides, when required.
Desize: Rope form in pit, kier, or on kettle. Open width on jigs, or pad and batch.
Boil-off: Rope form in kier or on kettle. Open width on jigs.
Bleach: Rope form in pit, kier, or on kettle. Open width on jigs.
Drying: Extractors (pad or vacuum), cans, hot frames, lay or loop dryer.

Since more fabrics in this group have the cotton in the warp and are of reasonably heavy construction, they will stand a large amount of warp tension and can be handled physically on the usual cotton-finishing machinery.

GROUP 2 (Viscose and acetate)

Singe: One or both sides when required.
Desize: Rope form on kettle. Open width on jigs, or pad and batch.
Boil-off: Rope form on kettle. Open width on jigs, or continuous conveyor unit.
Bleach: Often omitted. Can be done at same time as boil-off.
Drying: Extractors, pad or vacuum. Hot frame, lay, or loop dryer.

When the warp count is sufficiently high and controlled shrinkage is not required, a number of cloths in this group can be prepared under considerable warp tension. However, the majority of constructions will be processed as slack as possible, since too much tension imparts a wiriness and stiffness to the hand that is difficult to overcome in finishing.

GROUP 3 (Viscose and wool or Aralac) and
GROUP 4 (Viscose, acetate, and wool or Aralac)

Singe: Often omitted, since on some fabrics it tends to make the goods too smooth and decreases the fullness of hand.
Desize: Rope form in kiers or on kettles.
Scour: Same as desize, open width on conveyor, boil-off unit.
Bleach: Same as desize, open width on conveyor, boil-off unit.
Drying: Centrifugal or vacuum extractors, lay or loop dryers.

Practically all fabrics in this group are easily stretched, especially when wet, so every effort should be made to keep the warp tension to a minimum.

REPRESENTATIVE FORMULAS

(For all groups except as noted)

DESIZE—For starch and converted starch sizes.

Concentration: 1.0 to 3.0% amylolytic enzyme
0.1 to 0.2% suitable penetrant or wetting agent
Temperature: 120° to 170° F.
Time: 1 to 6 hrs.

—For glue and gelatin sizes.

Concentration: 0.2 to 1.0% proteolytic enzyme
Temperature: 120° to 140° F.
Time: ½ to 4 hrs.

NOTE. Only certain constructions sized with glue or gelatin are desized, since these compounds generally come off readily in warm water.

BOIL-OFF—For kier preparation

Formula 1—Primarily for **GROUP 1**

1.0 to 2.0% Soda ash
0.1 to 0.2% complex phosphate
0.2 to 0.5% soap or synthetic detergent, based on weight of cloth
0.01 to 0.05% suitable solvent added if goods contain much mill oil
Boil: 6 to 12 hrs. Open kier with pump running

—Formula 2—For **GROUPS 2, 3, 4**

Concentration: 0.1 to 0.3% complex phosphate
0.1 to 0.5% soap, synthetic detergent or mixture thereof
Time: 20 min. to 1.5 hr.
Temperature: 120° to 200° F.

NOTE 1. If Aralac is present, temperatures over 140° to 150° F. should be avoided.

NOTE 2. If bright acetate is present and it is desired to maintain luster, prolonged scouring over 180° F. should be avoided.

NOTE 3. On continuous boil-off machines and kettles, times of ½ hr. or less usually are sufficient. On jigs, longer times may be necessary.

BLEACH—Formula 1

Concentration: 1.0 to 1.5% volume 100 vol. hydrogen peroxide; 1:25 to 1.75% sodium silicate
0.1% soap or synthetic detergent, based on volume of solution
Time: 4 hr. or until there is only a small peroxide residual in bath
Temperature: 160° to 180° F.

—Formula 2—**For GROUP 1**

Concentration: 1.0 to 3.0 gms/liter available chlorine, hypochlorite solution
0.05 to 1.10% synthetic detergent or wetting agent
Temperature: 70° to 90° F.
Time: 0.5 to 8 hr.

NOTE. If goods are bleached on kettles or jigs, only the shorter times are required. If steeped in pits, longer times are necessary.

—Formula 3—**For GROUPS 1, 2, 3, 4**

Concentration: 0.5 to 1.5% volume 100 vol. hydrogen peroxide
0.5 to 1.5% ammonia 28%
0.1 to 0.25% synthetic detergent

NOTE 1. These concentrations for bleaching on kettles or jigs. Peroxide and ammonia may be added to boil-off baths.

NOTE 2. Due to its volatility, it may be necessary to add ammonia during the bleaching period.

NOTE 3. Bleach may often be omitted unless fabrics are going into whites or light shades.

DYEING

Mechanical Methods for Color Application:

GROUP 1. Pad, pad-jig, continuous machine, kettle, or beck.

GROUP 2. Pad, pad-jig, continuous machine, kettle, or beck. (Care must be given to tension if dyed on equipment other than tensionless jigs or becks.)

GROUPS 3 and 4. Jig, continuous machine, beck. (If dyed on jigs or continuous machines, the fabric must be kept as relaxed as possible in order to avoid undue thinning-out and causing difficulties in stabilization.)

DYES USED.—In the past, there has been considerable criticism by the consumer as to the dyes used on blends of synthetic, or synthetic and natural fibers. This criticism was entirely justifiable since many thousands of yards were dyed with colors that were neither fast to washing, light, or other service requirements. Much of this dissatisfaction was

caused by the fact that no one knew exactly the proper dyes to use on a given fabric, nor were there methods and equipment available for applying the faster types of dyes to blended fibers without producing objectionable dyeing effects, damaging one or more of the fibers in the blend, or so distorting the cloth that the proper hand and shrinkage control could not be obtained. Through the results of a large amount of practical research on the part of dye manufacturers and finishing plants, ability to apply colors of excellent fastness in a wider range of shades and on a larger range of blended fabrics is now greater than ever before.

DIRECT DYES—For **GROUPS 1, 2, 3, 4**—Applied on pad, pad-jig, jig, beck

The most extensively used class of colors for dyeing blends; however they must be most carefully selected in order to secure maximum fastness to light and washing, proper dyeing qualities, pure white reserve effects when desired, and minimum shade change when goods are given stabilization treatments in finishing. Improper selection in this group has given rise to most of the consumer complaints on fastness in the past. Applied by dissolving in water and salting on at elevated temperatures. After-treatments improve the wash fastness of a number of these colors.

DIAZOTIZED AND DEVELOPED COLORS — For **GROUPS 1, 2, 3, 4**

Primarily used for heavy shades in which directs may not possess sufficient wash fastness. Use limited since these colors often dye wool and Aralac shades other than their own and may badly stain acetate. Certain developers also stain acetate. Seldom employed for white reserves. Heavy-colored reserves and unions may cover up staining. Applied as are the directs, after which they are diazotized with sodium nitrite and acid, followed by coupling with the appropriate developer.

SULPHUR COLORS—For **GROUPS 1, 2**—Applied on jig or continuous machine

Use on blended fibers very limited since alkalinity of the dyeing assistants may injure both Aralac and acetate as well as the wool. Hand imparted by these dves apt to be harsh and firm. Applied by dissolving in a reducing bath of sodium sulphide and sodium carbonate or caustic soda. Dyeing proceeds at an elevated temperature. A water rinse follows the dye bath after which color is oxidized with sodium bichromate and acetic or formic acid, or sodium perborate.

NAPHTHOL COLORS—For **GROUPS 1, 2**—Applied on jigs, continuous ranges

Usually dyed only for specific effects on mixed fabrics.

JIG METHOD—Goods are first impregnated with the sodium naphtholate and may or may not be dried and coupled with a diazotized base or color salt, rinsed, soaped with soda ash or caustic soda, rinsed, and dried.

CONTINUOUS—Naphthol impregnation on a pad, followed by drying on a hot flue or air dryer. Goods enter coupling bath, followed by air skying, then rinsed, soaped, and rinsed again.

NOTE 1. Due to the alkalinity of the dye and soaping baths, naphthols do not lend themselves to application on blends containing Aralac, wool, or acetate fibers.

NOTE 2. Continuous units often produce so much tension that it is difficult to obtain the proper hand or fabric stabilization in finishing, particularly for GROUP 2.

VAT-LEUCO ESTERS—For **GROUPS 1, 2, 3**—Applied on pad-jig, jig, becks, continuous ranges

These colors possess, in general, good light and wash fastness and are not materially affected in shade or fastness by resin treatments. Since they possess little or no affinity for the cellulose fiber, they produce excellent unions on cotton-viscose; viscose-Aralac; viscose-wool; and even, in pastel shades, on viscose-acetate mixtures when the acetate is uniformly blended in and is not present in too large an amount.

NOTE 1. As these colors are dyed only in light and medium shades, any reserve effects are minimized by the depth of the shade.

DYEING METHOD—These colors are universally dyed by the nitrite method. The color is dissolved in water and made up to volume in the padding procedure, along with the proper amount of sodium nitrite, or else the calculated quantity of color and nitrite is added to the jig or beck. In jig or beck dyeing, it is necessary to salt on the color. After the cloth is impregnated with dye, it is developed in a hot sulphuric acid bath. On the continuous range, the cloth passes through the acid bath, over several sky rolls, and is washed, neutralized and soaped, and washed again. On the jig or beck, successive acid, rinse, neutralizing, etc., baths follow each other.

VAT COLORS—For **GROUPS 1, 2, 3, 4**—Applied on pad-jig, jig, continuous ranges, becks

This group offers the greatest possibilities for the production of fast dyeings on mixed fabrics and spun-rayon blends, with much development work yet to be done and knowledge to be assembled. It is possible to dye unions on spun viscose-Aralac, viscose-wool, and viscose-acetate mixtures with a minimum of damage to the Aralac, wool, or acetate. It is also possible to dye acetate reserve whites on spun viscose-acetate mixtures. Unmercerized cotton and spun viscose combinations can be union-dyed under proper conditions without too much objectionable "two-tone." However, it is very easy to produce an unsatisfactory result with vat colors, since so many factors have to be given consideration. Some of these are: weight and construction of cloth, amount and kind of blended fibers present, preparation for dyeing, the shade itself, whether union or reserve effects are desired, and type of finish.

APPLICATION—Vat colors have been conventionally applied either by reducing the dye with caustic soda and sodium hydrosulphite, and passing the cloth through this solution on a pad, then through an additional caustic and hydro bath to fix the color more firmly on the fiber. The dyeing is followed by a wash, oxidation, wash, soaping, and wash again. In the pad-jig method the color is applied in pigment form and subsequently reduced, etc., on a jig. In straight jig or beck procedure, the cloth is usually run for a short time in the suspended pigment, followed by a gradual reduction and salting on of color. By selection of colors, employment of minimum temperatures, and alkalis of lower pH than caustic soda, such as trisodiumphosphate and sodium carbonate, the dyeing of vats on spun blends is possible, although acetate, Aralac, and wool fibers may be affected. Unfortunately, many blends cannot be run on continuous units or jigs, largely because of the warp tension which thins them out too much or else puts such excessive shrinkage in some constructions that they cannot be stabilized in finishing. Recently, there have been a number of new dyeing ranges installed in the industry, using Williams or the DuPont pad-steam units. Certainly such ranges, if they are designed to operate with a minimum of tension, present interesting possibilities in the application of vat dyes to mixed fabrics and spun blends.

ACID COLORS—For **GROUPS 3, 4**—Applied on jigs, becks

These dyes, usually of the neutral-dyeing type, are often dyed along with direct and acetate colors, in the same bath, on spun blends. Either cross-dye or union effects are possible.

NOTE. Proper selection of colors is important for same reasons listed under DIRECT COLORS.

ACETATE COLORS—For **GROUPS 2, 3, 4**—Applied on jigs, becks

Dyed from suspensions in water and can also run along with direct and acid dyes. Used with direct and acid colors both for union and cross-dye or decorative effects. When acetate stripes, etc., are present to be dyed in deep shades

with the ground a lighter shade, it is possible to put in the acetate effect and dye the ground with either the vat-leuco esters or vat dyes, thus producing a combination quite fast to light and washing.

PIGMENT COLORS—For **GROUP 1** —Applied on pad

These colors are pigments dispersed in emulsified resin mixtures of either the water-in-oil or oil-in-water types. After padding, the cloth is dried and usually cured at elevated temperatures. Some yardage is being run in light pastel shades, though more on one-fiber constructions than on mixtures or blends. Fastness, in general, is quite good, especially to light. Interesting developments may be expected in this field, as improved resin binders and pigment dispersions become available. Pigment application offers much of interest to the dyer of synthetics, although there are a great many problems yet to be solved.

FINISHING

GENERAL—The finishing of mixed fabrics and fiber blends requires a considerable amount of skill, accurate application techniques, and proper selection of materials, as well as suitable machines and equipment. Also, it can truly be said that the finishing of mixed fabrics starts when the gray bale is opened. Every machine the cloth passes through in preparation and dyeing, every chemical it is exposed to, may favorably or adversely affect one or more of the blended or mixed fibers, the hand of the goods, or their shrinkage. The same holds true in the finishing operations themselves as here, too, tension, drying temperatures, amounts and kinds of finishing materials must be watched carefully as regards each particular fabric.

FINISHING MATERIALS—Softening Agents

Sulphonated and emulsified oils
Waxes
Cationic softeners

Stiffening and bodying agents

Natural gums
Dextrines
Synthetic resins:

1. Arcylate emulsions*
2. Cellulose ethers*
3. Ethyl cellulose*
4. Melamine resins*
5. Methyl cellulose
6. Polyvinyl acetate*
7. Polyvinyl alcohol
8. Methyl cellulose
9. Urea-formaldehyde resins*

Shrinkage control and fabric stabilization

1. Cellulose ethers
2. Melamine resins
3. Urea-formaldehyde resins
4. Definized process
5. Formaldehyde treatment
6. Glyoxal process

Crush-proofing resins:

1. Melamine resins
2. Urea-formaldehyde resins

Water-repellent treatments

1. Non-durable wax emulsions
2. Durable curing types

SOFTENING AGENTS—For **GROUPS 1, 2, 3, 4**—Applied on pad, mangle, quetsch, jig, beck

Sulphonated and emulsified oils, fats, and waxes are used alone or with various stiffening and body agents as plasticizers in quantities ranging from 1 to 10 lb. per 50 gal. They are nearly always applied on a mangle or quetsch. Cationic types are also applied the same way but can be run in the jig or beck because of their property of exhaustion. Cationic types are commonly employed as internal plasticizers with urea and melamine resins. Quantities used are from 0.3 to 5.0 lb. per 50 gal.

* Durable types

STIFFENING OR BODYING AGENTS — For **Groups 1, 2, 3, 4**—Applied on pad, mangle, quetsch

These agents are divided into two classes according to application. First class is padded and dried only; second group, pad, dry, cure, soap, dry. These products are available in various solution and emulsion strengths, or in the form of dry powders. Therefore, the amount required is usually based on the weight of dry material deposited on the cloth. This may vary as little as 10% to as much as 20%, depending on the product, the fabric, and the effect desired. The melamine and urea-formaldehyde resins are included under this heading; but while they are employed to impart hand and body, the effect is often incidental to their more extensive use as stabilizing and crush-proofing agents with GROUPS 2, 3, 4. With the melamine resins, 4.5 to 6.0% on the weight of the fabric is usually enough to give satisfactory stabilization; while with the ureas, approximately twice this quantity is necessary. For a full crush-proofing effect, these concentrations should again be roughly doubled, depending on the resin.

FABRIC STABILIZATION—For **Groups 2, 3, 4**

FORMALDEHYDE TREATMENT—This method consists of applying a definite amount of formaldehyde to the cloth under a carefully controlled set of time, temperature, and tension conditions, and drying the cloth under tension to an exact moisture content. The process is not extensively used in this country, since it requires extremely accurate control; otherwise the fiber is damaged on one hand, or stabilization is not accomplished. Hand or feel is not appreciably affected.

MELAMINE RESINS—See STIFFENING AND BODYING AGENTS.

UREA-FORMALDEHYDE RESINS—See STIFFENING AND BODYING AGENTS.

CELLULOSE ETHERS—Goods are impregnated with 1.0 to 5.0% of one of the various viscose ethers, dissolved in caustic, on a pad. The ether is set by removal of alkali, either by neutralization with acid or a cold water wash. Attention must be given to time and temperature conditions, otherwise it is easily possible to damage fibers other than viscose or cotton.

DEFINIZED PROCESS—This new method for stabilization does not affect the hand. The process consists of impregnating the cloth with a protective colloid, padding through a strong caustic soda solution, and so washing as to neutralize and remove the caustic under rapid and controlled conditions.

GLYOXAL TREATMENT—This procedure, named Sanforset, is one of the newest processes of fabric stabilization. It follows the same procedure as for the melamine and urea resins. The cloth is impregnated on a pad with the glyoxal solution, dried at relatively low temperatures, cured at an elevated temperature, soaped, and dried again.

WATER-REPELLENT TREATMENTS — **Groups 1, 2, 3, 4**

Not as extensively used on mixed fibers or blends as on all-cotton constructions.

NON-DURABLE (wax types)—Applied by the usual pad and dry method. Concentrations range from 2.0 to 12.0 oz./gal.

DURABLE TYPES—Applied on a pad, dried at a medium temperature, cured at an elevated temperature, soaped, and dried. Concentrations range from 4.0 to 6.0% deposited on the cloth. Concentrations and conditions should be adjusted for each individual fabric, since the repellency is often not the same as on cotton. On some constructions, an objectionable surface film may be deposited which will readily show "break" marks. It is often possible to combine these materials with various resins and apply them at the same time. Again, careful tests should be made on each individual fabric to see that the results are as desired.

Synthetics Complicate Dyeing In WOOL-FINISHING Plants

22nd ANNUAL SYNTHETICS NUMBER

HIGHLIGHTS: *Acetate, viscose, nylon, and Aralac in blends present variety of piece-dyeing problems— Stock dyeing seems best answer for some blends — Nylon-and-wool in development stage.*

By N. D. MARIUS

THE DYEING OF FABRICS composed of wool mixed with synthetic fibers presents quite a few problems for solution if a satisfactory merchantable product is to be obtained. Consideration must be given to the following factors: The production of wide fabrics for the garment manufacturer who is accustomed to handling only wide fabrics, the type of synthetic fiber used, the fastness requirements for the color, the amount of the synthetic fiber mixed with the wool, and the construction or density of the fabric.

WOOL AND VISCOSE. In discussing the dyeing of viscose and wool, consideration should be given to the use of the fabric before manufacturing it in the mill. If the cloth is a men's-wear gabardine containing 20% wool and is to be finished 54 inches, a real problem presents itself to produce a satisfactory fabric. The color has to have the normal fastness to light of men's wear and must be fast to perspiration. Such a fabric might be marketed as washable and accordingly would have to be dyed satisfactorily for such a purpose. Frankly, there is no satisfactory answer to this problem of piece-dyeing such as a fabric in a solid shade with the general equipment of the present worsted mill.

In cotton and rayon finishing plants, such a fabric in a narrow width can be handled satisfactorily. The type of colors used depends on the depth of shade. Many pastels can be satisfactorily dyed with selected direct colors. For medium and dark shades, vat dyes would be the only colors that could produce a satisfactory fabric. The fabric should be dyed in open width on the jig or by the newer continuous range installation, such as the pad-steam process. Wide fabrics could be processed in those mills which have a continuous dyeing range which handles wide fabrics. Very fast shades can be obtained with the use of the Indigosol type of dye along with neutral-dyeing wool colors. Careful control should be maintained of pH, temperature, and feed of the dye to the color section.

When a wide men's-wear fabric is a blend of 60% or less of viscose with wool, the worsted or woolen manufacturer can plan to produce this fabric in two ways that will give good results. The easier method is to stock-dye the rayon before weaving and to cross dye, in the piece, the white wool to give a solid shade.

Stock-dyeing of rayon has been a problem to do cheaply. For men's wear, the rayon would have to be dyed either with sulphur colors or vat dyes. As light fastness is an important consideration, the range of sulphur dyes is limited.

Any dyeing of viscose rayon in strongly alkaline liquors presents difficulties in machine dyeing. Swelling of the rayon occurs to such an extent that with some types of slub-dye machines, it is impossible to circulate the dye liquor evenly through the swollen mass. This swelling has limited the amount of rayon that can be dyed and type of machine that can handle it successfully.

Stock or slub dyeing of viscose rayon limits the flexibility of the fabric production, compared to piece dyeing, during which changes in shades can easily be made. However, a decorated fabric composed of stock-dyed rayon and chrome-dyed wool can be produced which has the appearance of a men's all-wool fabric.

Decorated fabrics can also be produced by piece-dyeing the white rayon mixed with the white wool, although decoration of the fabric will be limited to the use of acetate rayon. This fabric can be piece-dyed with selected direct

New Japanese Synthetics Found

A report on "The Rayon and Synthetic Fiber Industry of Japan" is soon to be printed by the Textile Research Institute. This publication will contain the detailed information on that industry gathered by the Textile Mission to Japan, which was sent this year by the Department of State and the Army. It is written by H. Wickliffe Rose, the rayon member of the mission, and is supplementary to the report of the mission, which was left with General MacArthur and is now available through the Department of State.

Some new fibers were found in Japan which are not known in this country, both of viscose rayon and of polyvinyl alcohol. Some processes in the production of rayon were found to be quite advanced, and details of such processes are outlined. Continuous steeping of pulp is used at one plant, for instance, and short-age viscose making is used in several plants, while low-caustic process is being tried by nearly all companies in Japan.

The book will be illustrated with pictures and machine sketches.

cotton and neutral wool colors in one bath, followed by an after-treating fixation.

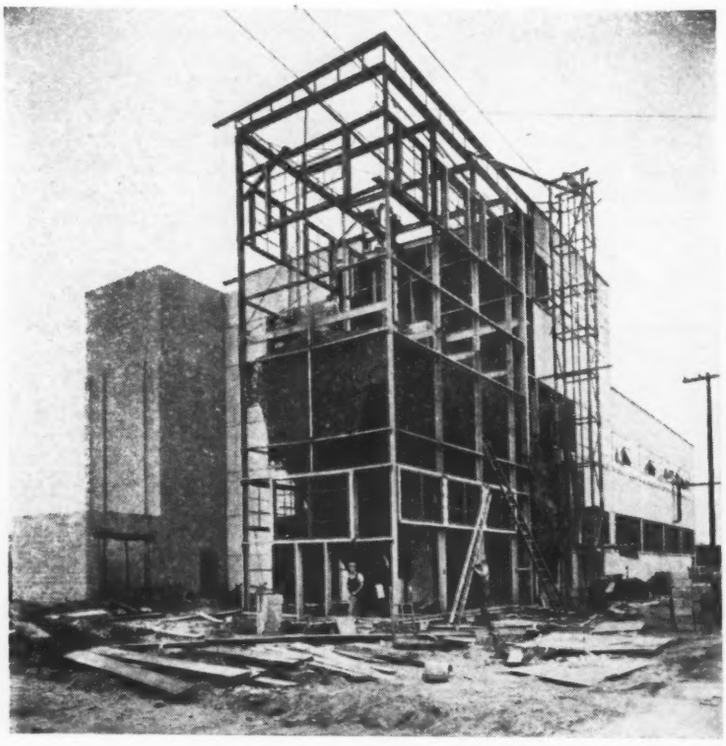
Dyeing women's-wear fabrics composed of wool and 60% or less of viscose rayon does not present much of a problem. Due to the lower fastness requirements and the demand for bright mode shades, such mixed fabrics can be satisfactorily dyed by the one-bath union method, using direct cotton and neutral wool-dyeing colors. The dyeing of such fabrics leaves the rayon white for mixed effects, and is easily carried out using acid-dyeing wool colors. However, dyeing the rayon while leaving the wool unstained does present a problem, particularly in dyeing dark shades. A wool resist of the Katanol or Thiotan type is necessary to prevent direct cotton colors from staining wool.

WOOL AND ACETATE. Mixtures of wool and acetate have been used quite extensively for women's fabrics. Piece-dyeing of such fabrics in which the acetate is left white does not present a problem, as the usual acid-dyeing wool colors can be used to obtain the desired result very easily. However, in dyeing solid shades care must be taken in the selection of the color to dye the acetate, as the acetate dyes also have a high affinity for wool; and although they possess good fastness to light on acetate, they have relatively poor fastness on wool. It is absolutely necessary to treat such dyeings of acetate with an antifume agent after dyeing to insure stability to gas fading.

The foregoing statement holds true to a greater extent for men's fabrics constructed of wool and acetate mixtures. Indeed, it is a difficult problem to obtain sufficiently good light fastness. Extremely careful color selection must be made. Only acetate dyes made with an anthraquinone base should be used, and even these show a variable degree of fastness. It is also absolutely necessary to after-treat such dyeings with an antifume agent. In dyeing a wool-acetate mixture in which the acetate is left white, satisfactory men's wear fabrics can be produced as the wool can be dyed with chrome colors of satisfactory fastness; and with the use of sufficient acid, the acetate can be left unstained.

WOOL AND ARALAC. Aralac being a protein, or an azlon, fiber does not present much of a problem in dyeing when mixed with wool. It does present, however, a distinct wet-finishing problem in preparing the cloth for dyeing. Aralac has a low wet strength, and sufficient wool should be used with it to allow it to be handled in the fabric state. Aralac is readily damaged by alkalis, and fabrics containing this fiber should not be processed at a pH much higher than that of plain water. The best method of fulling and scouring fabrics of wool and Aralac is to use a neutral synthetic detergent with a little bicarbonate of soda.

If such fabrics are dyed without an appreciable wet finishing but are cleaned in the dye kettle before dyeing, it is advisable to neutralize the acidity in the Aralac with some very mild alkaline material like bicarbonate of soda; rinse, and then proceed with the dyeing. Aralac, due to the formaldehyde used in its manufacture, generates acid upon heating in water and will have a high affinity for all acid wool dyes. Accordingly, selected acid dyes which dye Aralac and wool an equivalent shade can be used in dyeing fabrics composed of a mixture of these fibers. Careful control of the pH of the dyebath will be necessary to prevent the Aralac from exhausting too much of the dye. A better-appearing fabric is obtained if the temperature of the dyebath is raised high enough to obtain good equalization of the dyestuff between and within all the fibers.



More protein synthetic fiber will be available as this plant gets under way for the Drackett Co. at Sharonville, Ohio, to extract soybean protein to be used for producing fiber in a new plant which is currently nearing completion.

WOOL AND NYLON. At the present time, the dyeing of wool-and-nylon mixed fabrics is in the development stage only. Piece-dyeing fabrics of this mixture presents difficulties. Most wool colors either stain or dye nylon quite heavily, and in many cases not the same shade as wool. Fastness properties also vary.

Uniform mixtures will be absolutely necessary to obtain a solid shade in piece-dyeing. At present, the most satisfactory method is to dye the nylon and wool in the stock. Acetate dyes have been found to be satisfactory for coloring nylon, and with proper selection they give shades of good fastness to light, perspiration, and washing. Fortunately, acetate dyes are much faster on nylon than on wool, and are quite economical in color value.

In piece-dyeing nylon, anthraquinone wool dyes have been found to give fairly satisfactory results both in fastness and color value. However, much development still lies ahead in producing wool-and-nylon fabrics which will give satisfaction to the consumer from the color standpoint. The possibilities of producing summer-weight fabrics of excellent physical properties warrants serious consideration by the technologists.

NEW SYNTHETIC FIBERS Constantly Being Developed

HIGHLIGHTS: ***Many new foreign fibers disclosed, some in commercial production — Emphasis in United States is on increased production of present synthetics — Synthetics Fiber Table still up to date.***

THE USUAL FLOOD of reports of new synthetic fibers is currently swollen by the dozens of German developments being reported by U. S. and British technicians. And the end of the war has permitted renewed effort here toward the development of new, improvement of old, and blending or radical modification of existing fibers.

Some of the newer types of fibers are listed in the accompanying table along with a few of their properties. The list is by no means complete, nor can the properties of any fibers under development be considered anything more than approximations.

Despite all the new fibers which have been produced experimentally, none has reached large-scale production in the United States since the introduction of nylon. Some few—notably Drackett's soybean fiber and Du Pont's Fiber A—are being spun on a small scale. In Europe during the war, notably in Germany, several new synthetics were produced in fiber form; but, as yet, there are no indications that any of them will be produced in this country to any appreciable extent.

Most work with synthetic fibers in the United States has been to get more and more production of the existing commercial types. Emphasis is on staple fiber which is now so relatively low in price that it can be blended to cheapen cotton yarn—an exact reversal of the situation formerly.

Properties of yarns produced commercially have changed so little that for practical purposes the Synthetic Fiber Table published last September has needed no revision as yet. Copies are still available from TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y.

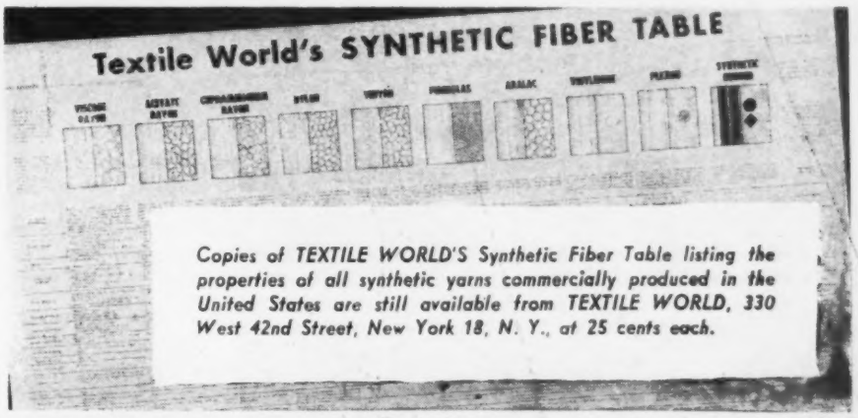
SOME NEWER SYNTHETICS

Fiber	Status	Spinning Method	Types Made	Strength in g.p.d.	Approximate Elongation	Comments
Alginates	Foreign experimental	Wet	Multifilaments	1 to 2	3 to 15%	Seven types being tried, some water soluble.
Ardil	British limited com.	Wet	Staple	Weak	50%	A protein wool-like fiber.
Hollow fibers	Experimental	Wet	Hollow staple	1.8		Viscose-type staple.
Pe Ce	German wartime com.		Staple and multifilaments	1.8 to 2.2 3 to 5	40%	Chlorinated polyvinyl chloride.
Perlon	German commercial	Dry	Multifilaments	Up to 7	14 to 20%	Variety of Perlons made.
Polyethylene	U. S. and German experimental	Melt	Monofilament	Weak	100 to 600%	Can be cold drawn.
Polystyrene	German experimental	Melt	Coarse filaments	1.5		
Polythiourea	Experimental	Wet or dry	Multifilaments			Filaments spun as fine 0.5 den.
Polyvinyl alcohol	Experimental	Dry	Mono and multifilament	Up to 2.5	25%	Soluble in hot water.
Polyvinylidene chloride	German experimental	Dry	Monofilaments	3 to 4	Good	Multifilaments possible.
Sarelon	Experimental	Wet	Staple and multifilament			Peanut-protein fiber.
Zein	Experimental	Wet	Staple and multifilament	1 to 1¼	200 to 400%	Fiber finer than 0.6 den. possible.

Virtually all synthetic fibers being developed have some desirable properties, potentially if not actually. Above are listed a few of those which seem more interesting. Properties attributed are by no means exact.

AZLON. The generic name azlon was adopted during the year to apply to man-made natural-protein-base synthetic fibers such as Aralac, Sarelon, and soybean fiber. The Federal Trade Commission has drawn up suggested trade practices for identification of azlon fiber in textiles.

Should the use of saponified acetate fibers (such as Du Pont's Fiber B and Celanese's Fortisan) grow appreciably, another generic term might be desirable in preference to calling these fibers saponified acetate rayon.



Copies of TEXTILE WORLD'S Synthetic Fiber Table listing the properties of all synthetic yarns commercially produced in the United States are still available from TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y., at 25 cents each.

Four U. S. D. A. Laboratories Work on NEW SYNTHETICS

22nd ANNUAL SYNTHETICS NUMBER

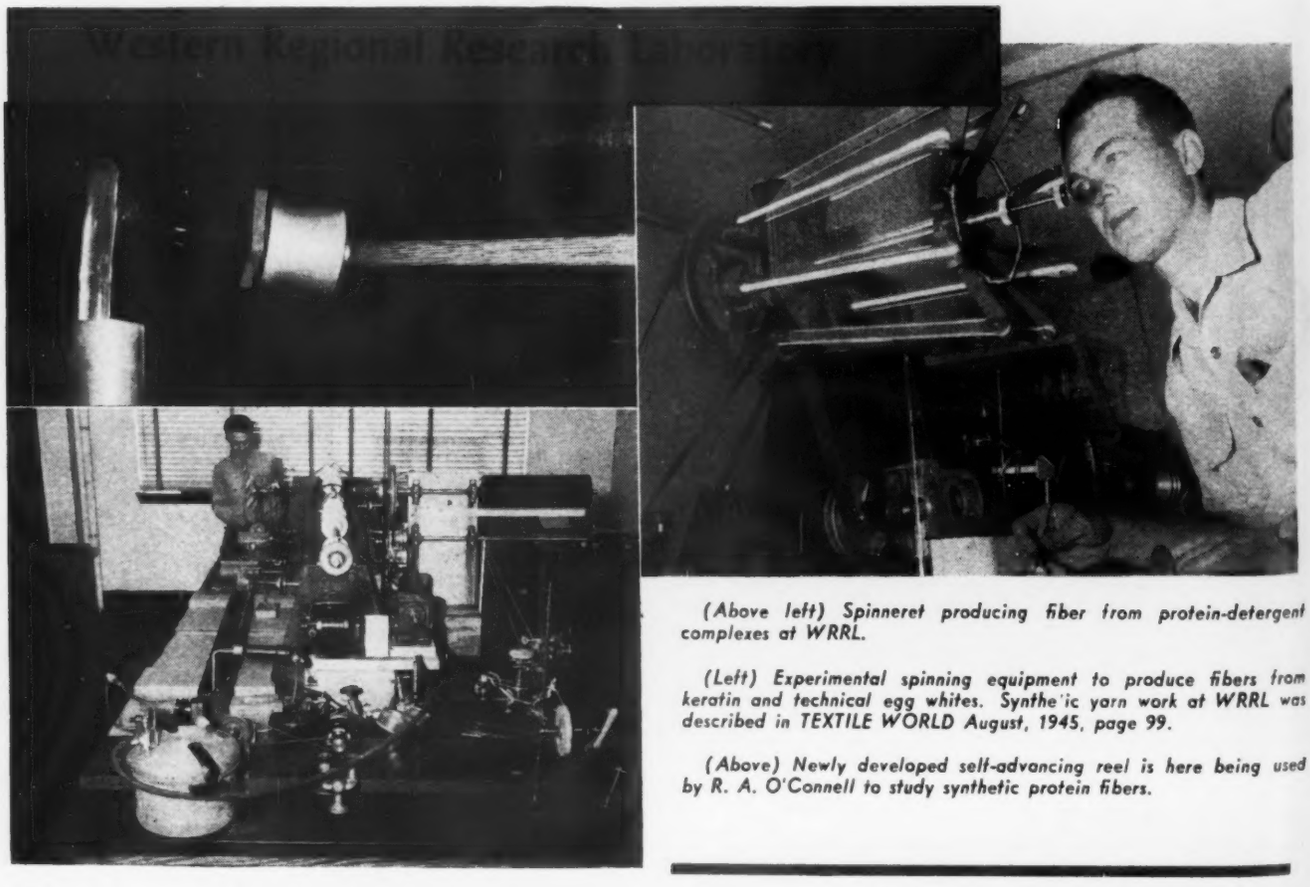
HIGHLIGHTS: *Experiments renewed since war ended—Zein fiber produced at Northern, peanut at Southern, casein at Eastern, and various protein at Western laboratory—Some production on pilot-plant scale.*

DEVELOPMENT of some type of synthetic fiber which uses as its base a farm product is part of the program of each of the four regional research laboratories set up by the U. S. Department of Agriculture's Agricultural Research Administration, Bureau of Agricultural & Industrial Chemistry. In addition, of course, work is done on developing natural fibers, such as that being done on cotton by the Southern Regional Research Laboratory at New Orleans.

The SRRL synthetic-fiber project is fiber from peanuts, which has developed sufficiently so that a name has been assigned the new textile material: Sarelon.

The Northern Regional Research Laboratory, at Peoria, Ill., is developing textile fiber from corn which it calls "Zein," while the Western Regional Research Laboratory at Albany, Calif., is experimenting with various proteins as a source of fiber. Two, egg-albumen and keratin (T.W., Aug., 1945), appear to have promise as sources from which fiber can be produced with some excellent properties.

Although the Eastern Regional Research Laboratory at Philadelphia has done considerable work on textile fiber from casein (the source of one commercial synthetic protein fiber), it is currently emphasizing development of casein for bristles to be used in brushes.



(Above left) Spinneret producing fiber from protein-detergent complexes at WRRL.

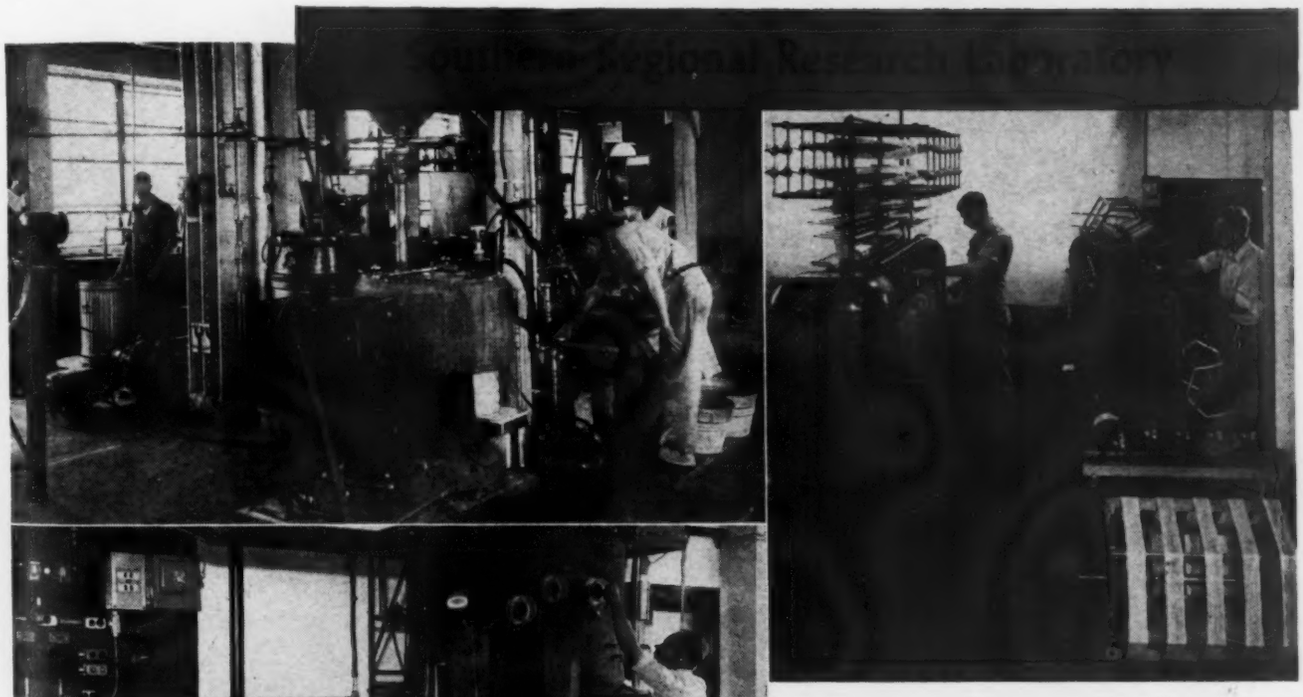
(Left) Experimental spinning equipment to produce fibers from keratin and technical egg whites. Synthetic yarn work at WRRL was described in TEXTILE WORLD August, 1945, page 99.

(Above) Newly developed self-advancing reel is here being used by R. A. O'Connell to study synthetic protein fibers.

(Above) Extrusion and hardening of casein fiber in an experimental machine at ERRL. Fiber being produced is for bristle, but textile types can also be spun.

(Upper right) Bristles and experimental brushes made of specially hardened extruded casein protein. Bristle may be produced on commercial scale before end of year.

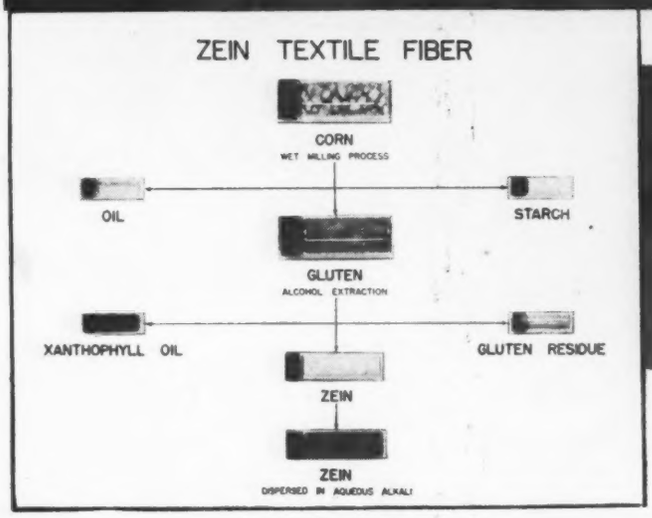
(Right) Continuous-filament casein yarn and knit fabric. Fiber can be cut to make staple.

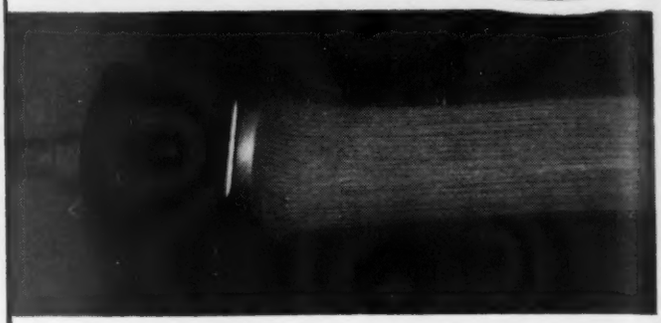


(Above left) Pilot plant at SRRL produces peanut protein for spinning of synthetic fiber.

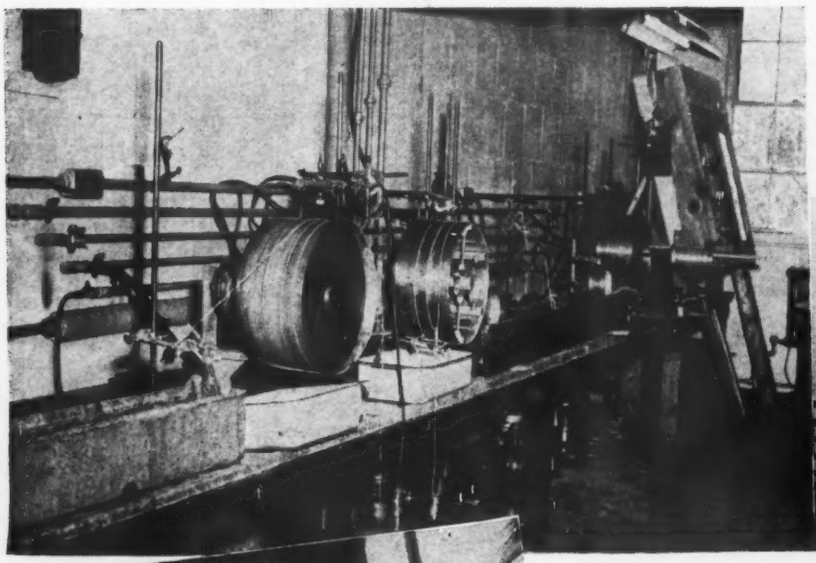
(Left) Experimental spinning machine uses wet process much as is used to produce viscose rayon. Peanut protein fiber has been named Sarelon.

(Above) Skeining (foreground), winding (right, rear), and twisting of Sarelon. Work on this project was slowed down during the war but is now being resumed.

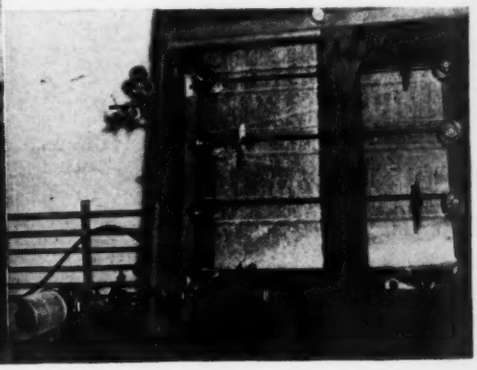


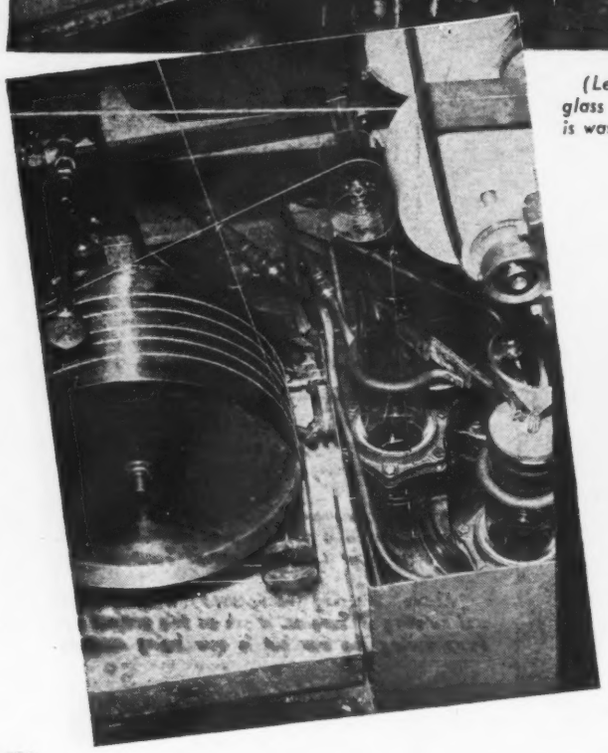


(Left) Stages from corn grain to Zein ready for the spinneret are shown in this NRRL display. (Above) Alkali Zein solution is extruded through a spinneret much as is done in spinning of rayon.



(Left) Experimental apparatus for coagulating, stretching, and drying raw Zein fiber. Fiber proceeds from left to right from the spinneret and coagulating bath, over the first large reel, through pre-cure jars to a second reel, into a stretching bath, and then through a dryer at the extreme right. (Below) Details of the dryer. Yarn is wound on aluminum spool at the lower left.





(Left) In this continuous acetylation unit, the Zein fiber goes into the large glass U-tube in which an acetic anhydride solution is circulated. The "tow" is washed and passes on to other processing equipment.

Packages of Zein fiber.

Correct ROLL SETTINGS Improve Yarn Quality

HIGHLIGHTS: *Roll settings for high-quality yarns are often made to 1/64 in.—Classified length of staple should be used rather than average length—Too close roll settings may result in cockled yarn, fiber slippage, and breakage.*

By SETH CARTER

A PROGRESSIVE MILL recently started an investigation into the general complaint from cotton-yarn manufacturers of their inability to obtain warp-yarn strength equal to previous years' standards.

Figures compiled from several sources showed a consistent loss of 6% to 15% in break factors. This loss of strength was also reflected in increased spinning-end breakage and loom stops.

A noticeable increase in clearer waste on drawing, roving, and spinning frames and an increase in fly on spinning rails and travelers plainly indicated one of two causes. There was either an increase of short fibers in the cotton or poor control of the shorter fibers in drafting.

Fiber arrays made from representative samples of the cotton showed maximum and mean lengths close to previous standards and only a slight increase in the amount of short fibers. These findings pointed to uncontrolled short fibers during drafting as the probable cause, and indicated that correct roll settings should furnish proper control of both long and short fibers.

PRECISE SETTINGS. A check on roll settings showed a general tendency to set rolls wider than necessary for the length of staple being used. These wider settings were justified by past experience when closer settings had caused much grief because longer-staple cotton had been passed by the classing department. In general, the mill's findings indicated a need for a thorough review of roll-setting methods.

Mills on high-quality work carry roll-setting measurements to a high degree of precision. Settings are often given in 64ths of an inch. These mills claim that carefully set rolls result in consistently higher yarn strength and better quality of finished product.

The benefits of precision settings are lost unless every bale of cotton is carefully classified for length by a skilled classer. An accurate method of determining and recording the exact staple length should be used, and humidity in the classing room should be maintained automatically at standard moisture regain. Every bale classing 1/32 in. more or less than the specified classified length should be held out and used in the proper length class.

Advocates of wider settings submit the following query: If fiber arrays of 1-in. cotton show that 20% of the fibers are longer than 1 in. and some have actually a maximum length of 1¼ in., what happens to these longer fibers when the front-to-second roll setting is 1⅛ in.?

Three things can happen. First, hard or cockled ends may result. These ends are easily detected, and corrections in settings can be made. Second, fiber slippage may occur in the mass of fibers held under either or both rolls. Third, fibers may be broken when ends are held under both rolls at the same time. Slippage or breakage is hard to detect, and results in loss of yarn strength and in poor-running work.

VARNISHED ROLLS. Claims are made that a smooth or well-varnished top roll permits the slippage of longer fibers without injury. However, the front edge of flutes on the bottom steel roll would also have to be smooth to permit absolute slippage; and it is difficult to understand how even-drafting could be obtained if uncontrolled slippage between bites of rolls did exist.

Instructions on roll setting in some

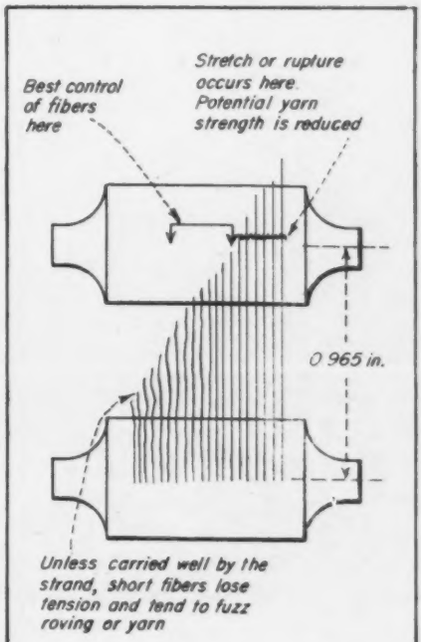

Best control of fibers here
Stretch or rupture occurs here. Potential yarn strength is reduced
0.965 in.
Unless carried well by the strand, short fibers lose tension and tend to fuzz roving or yarn

Fig. 1. When based on average rather than classified length, roll settings may be too close, as illustrated by superimposing a fiber array of 1-in. cotton on the roll spread.

Roll Settings Generally Used By Mills

	Classified staple length in inches plus
Drawing	1/4 in.
Regular slubber	3/16 in.
Long-draft slubber	1/4 in
Intermediate	3/16 in.
Fine frame	1/8 in.
Jacks	1/16 to 3/32 in.
Spinning	1/32 to 1/16 in.

Fig. 2. These roll settings for various frames, used by many successful mills, are based on the classer's length of cotton.

3% Greater YIELD BY WEIGHT

SUN PROCESSING AID . . .

Means Increased Wool Yields and Cleaner Wool

A New England mill reports, after experience with a "Job-Proved" Sun processing oil, that they are getting cleaner wool and 3% greater yield by weight.

Previously, this mill had used a different type of processing agent . . . one which did not give the required softening effect — and which, incidentally, did not cause any appreciable increase in the weight of the wool.

In scores of mills, actual on-the-job experiences like this have proved the qualities of Sun processing aids. Sun products have excellent wetting-out qualities. They penetrate and scour out evenly. They easily form a stable emulsion and will not turn rancid in storage.

If it's a question of petroleum products for textiles or textile machinery, call the Sun Engineer near you. "Job-Proved" Sun products help to improve quality . . . to speed up handling . . . to increase production.

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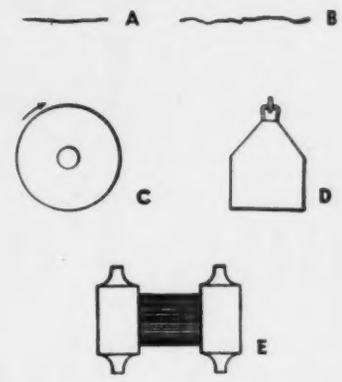
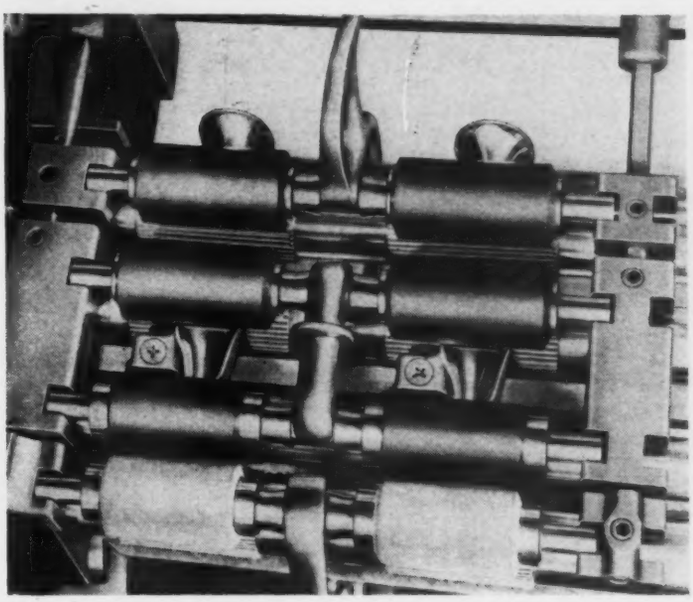


Fig. 3 Some of the factors which require wider settings: A, longer staple; B, harsh, wiry staple; C, increased roll speed or draft, and larger roll diameter; D, increased weight on top rolls; and E, heavier strands which increase the bulk of the material between the rolls.



Effect of Roll Settings on End Breakage and Yarn Strength

	Test No.			
	1	2	3	4
Front-to-middle, slubber (in.)	1 9/32	1 11/32	1 13/32	1 15/32
Front-to-middle, intermediate (in.)	1 15/64	1 19/64	1 23/64	1 27/64
Front-to-middle, fine frame (in.)	1 7/64	1 11/64	1 15/64	1 19/64
Yarn strength (lb.)	50.86	50.89	51.39	50.37
Ends down (per 1000 spdl. hr.)	42.4	45.8	39.9	56.9

Fig. 4. Tests on staple yarns show that the effect of roll settings on end breakage and yarn strength are not too critical. Beginning with test No. 1, the roll settings were increased in 1/16-in. increments.

of the older text books are very misleading. Directions are given to set front-to-second rolls to $\frac{1}{8}$ in. over the average length of staple. Slavishly following these directions would cause much trouble. The average or mean length of normal 1-in. cotton is about 0.84 in. With $\frac{1}{8}$ in. added, the setting would be slightly under 1 in. What happens to the longer fibers with this setting is illustrated in Fig. 1, in which a fiber array is superimposed on the roll setting.

The rules given for roll settings should be taken only as a guide and should not be considered as inflexible instructions. Many factors (Fig. 3) affect roll settings, and all of them should be considered when determin-

(Continued on page 200)

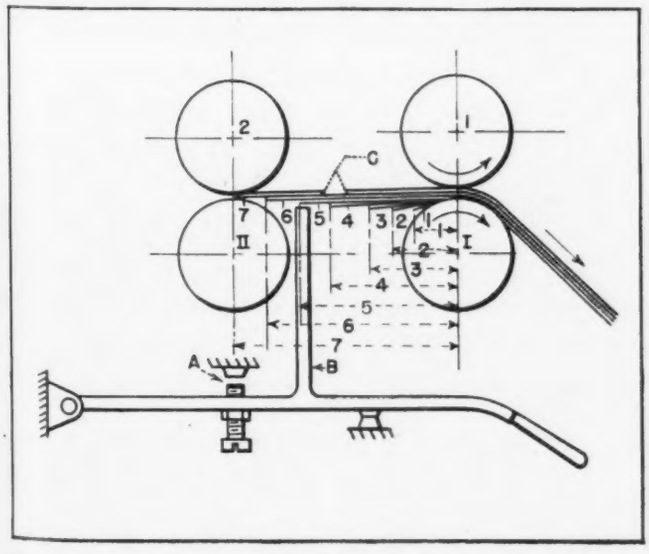


Fig. 5. The position of the Roll Spacing Determinator is shown above. The fiber lengths are identified numerically.

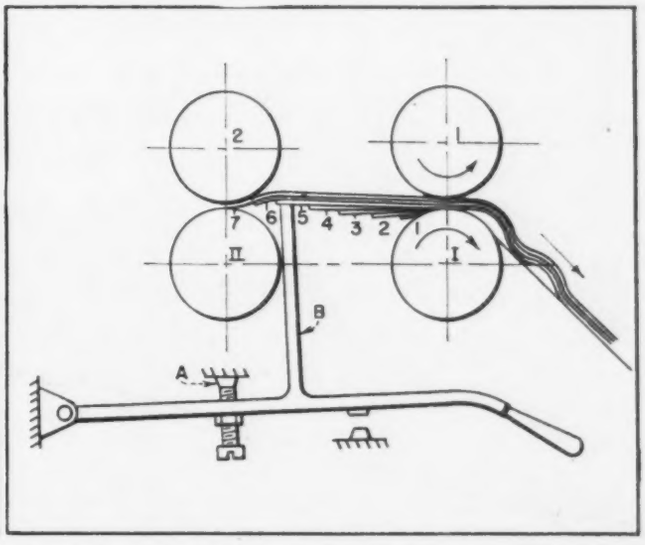
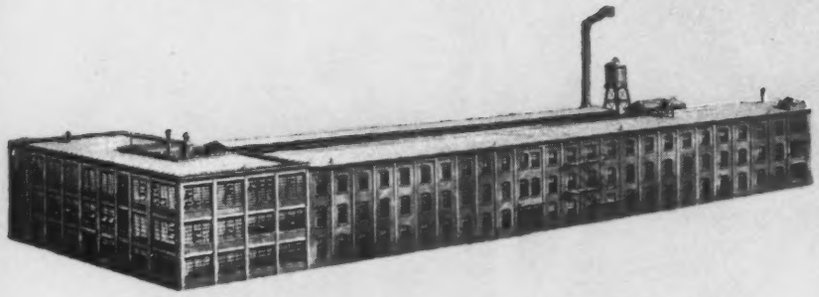
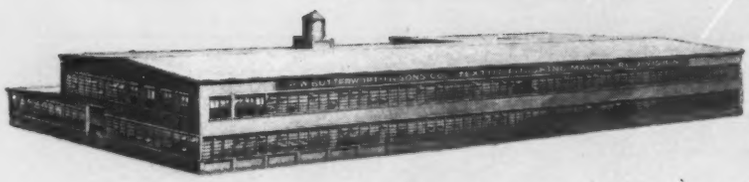


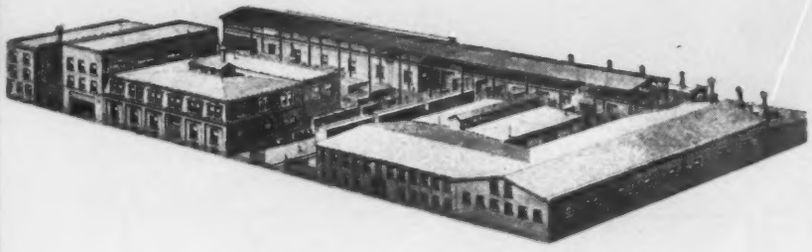
Fig. 6. If lever B is raised and the rolls are set too close, the fibers hold back and a "wave" appears upon the viewing board.



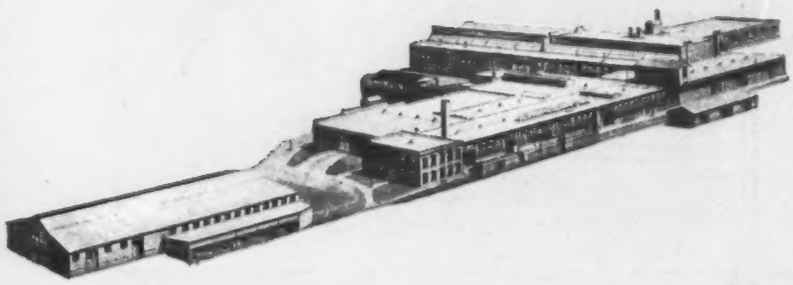
Main Butterworth Plant, Phila. 126,952 sq. ft. of floor space devoted to the production of textile finishing machinery.



Textile Finishing Machinery Division of H. W. Butterworth & Sons Company, Providence, Rhode Island.



Home Office including model plant for test runs and shipping and receiving sections, Philadelphia.



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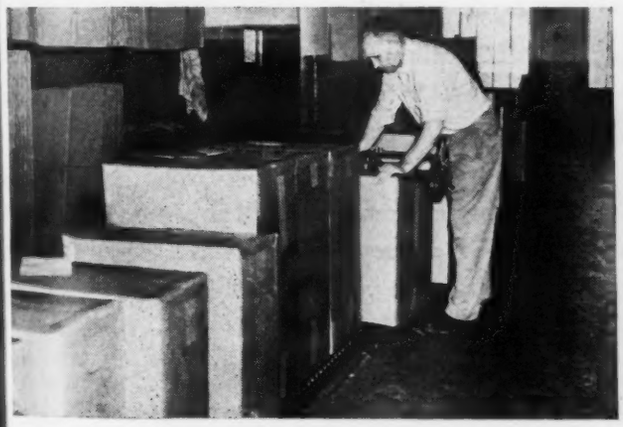
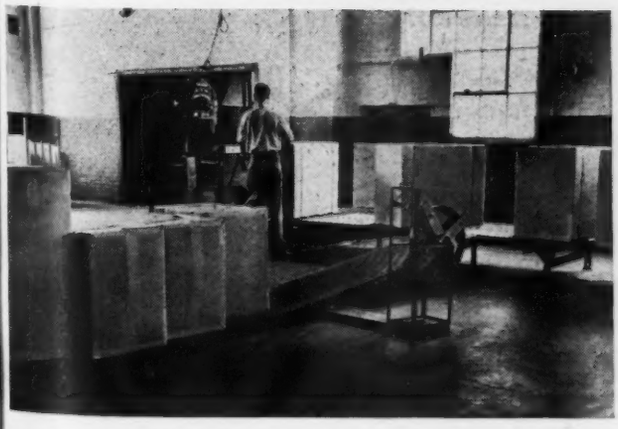
MATERIALS HANDLING
Reveals Mill Engineering Skill

HIGHLIGHTS: *Assembly-line technique employed by Marshall Field & Co. in blanket-finishing mill—Beaumont Mfg. Co. hauls cloth from weave room to cloth room with novel electric trolley—Dan River Mills, Inc., substitutes belt conveyors, gravity conveyors, chutes, and gasoline and electric trucks for laborious handling and hauling—Joanna Cotton Mills' bobbin-handling system employs time-saving hoist, chute, and conveyor.*

PROFIT OR LOSS in a mill is frequently determined by the economy with which materials and goods are handled between processes and within the regions of the various processes. It has been estimated that the average mill must move approximately 15 tons of materials for each ton of gray cloth

Fig. 1 **through** *4. Photographs from Marshall Field & Co., Manufacturing Div., Spray, N. C. illustrate one of the few examples of assembly-line materials handling. Blankets are gathered by lots, graded, packed into cartons, and placed on a combination roller and gravity conveyor which is partly shown by these photographs.* **Fig. 1** *(upper left) shows operator fastening metal bands to cartons. (Previous operations of placing blankets in cartons, taping, and attaching shipping instructions have already been performed.) After fastening bands, the operator merely pushes the box to the next employee, thus eliminating the fatiguing work required in personal transporting of containers.* **Fig. 2** *(upper right) is a view from rear end of the assembly line showing boxes being prepared in the background, a segment of the long roller conveyor, and the scales where the weights are marked on the cartons. The opening on extreme left goes to a circular chute which carries blankets down a floor to shipping platform below.*





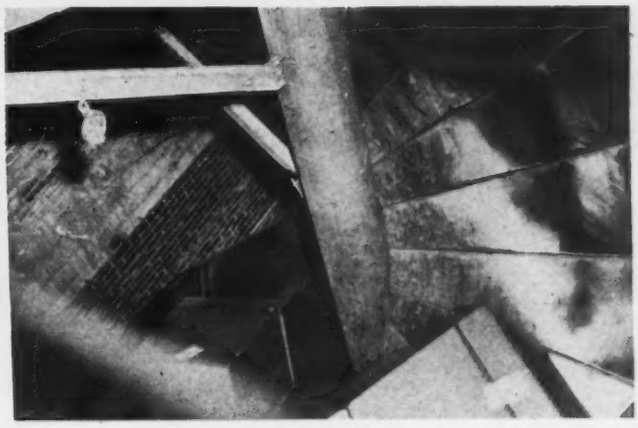


Fig. 3 (lower left), another view of scales, shows one of the many branch roller-conveyors which veers off the main line. These branch lines are for the various sizes and types of shipping cartons used. Fieldcrest blankets are packed in various sizes of cartons. **Fig. 4** *(lower right) is an interior view of the circular chute. Note the two cartons of Marshall Field blankets caught by the camera in the descent down the chute from the packing department to the shipping department.*

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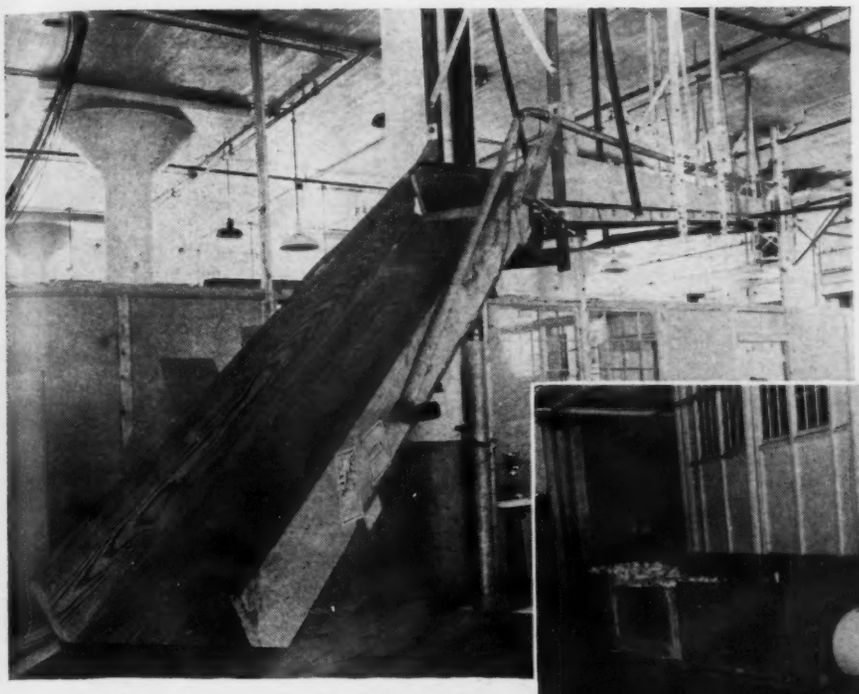


Fig. 5 through 8 illustrate a variety of materials-handling methods used at Dan River Mills, Inc., Danville, Va.

Modern gasoline dinkies, as pictured in Fig. 5 (below), are responsible for much materials handling about the huge mill. The coupling arrangement on all vehicles is the same. This allows a warp beam going in the same direction as warp bobbins to be included in the load.

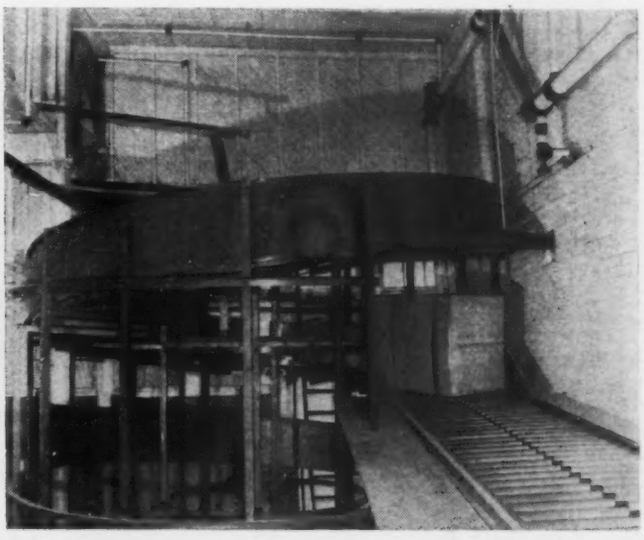
In Fig. 6 (above), if you note carefully the ceiling-suspended structure leading to the gravity chute, you will see that it utilizes a continuous conveyor belt which carries packages ready for shipment from the floor above. The speaking tube, whose mouthpiece is mounted on the gravity chute, permits easy communication with the other end.

produced. When the handling in finishing plants is added to this, each ton of finished cloth represents over 20 tons of materials moved.

Today, many mills are using, and others are developing, efficient methods of handling and moving materials. Conveyors, trucks, hoists, tramrails, chutes, and other equipment are being applied in ever increasing numbers.

The ways in which similar problems are worked out differ from mill to mill, depending on local conditions, plant layout, and other factors. In some cases, standard equipment can be used with little or no change; in others, installations are "tailor made" to the job. The four mills in which the accompanying pictures were taken have used both kinds of apparatus; and the ways in which the individual problems have been solved show skill, ingenuity, and perception. It is hoped that the methods and equipment shown will help other mill men with their handling problems.

(Continued on page 129)



The man in Fig. 7 (left) is leading a so-called "electric mule." You can see that the mule is carrying a lift platform itself and is pulling several more. Fig. 8 (right) shows how Dan River goods, when packed and ready for shipment, slide down the inclined plane of ball-bearing rollers onto the shipping platform which is the same one upon which the raw cotton is received.

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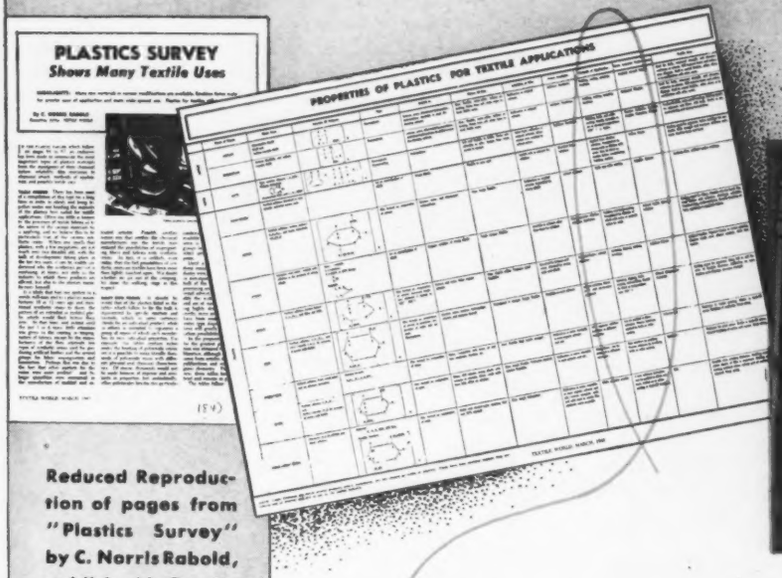

Reduced Reproduction of pages from "Plastics Survey" by C. Norris Rabold, published in Textile World.

Photo courtesy of Cleaveland Laboratories & Mfg. Co.

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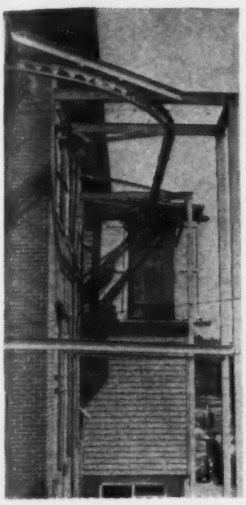

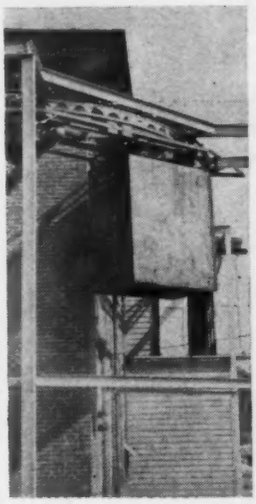

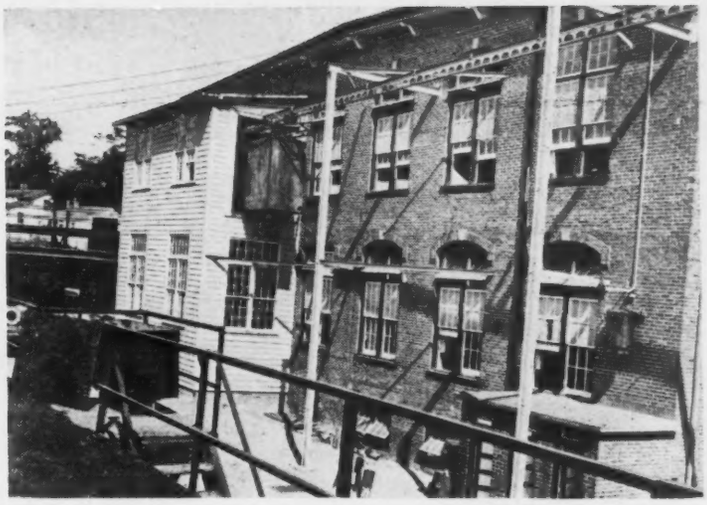

Fig. 9 through 11, *a series of photographs from Beaumont Mfg. Co., Spartanburg, S. C., show the novel method used by this mill to haul cloth from the weave room to the cloth room. Weave room is a considerable distance from cloth room. By erecting an electric-trolley around the building, the mill avoids much of the handling and all of the pushing involved in transporting cloth rolls. (Cloth rolls are duck, and thus considerably heavier than those found in the ordinary mill.)* **Fig. 9** *(left) shows the conveyor car leaving the elevator building at the weave room. The marking says "1800 lbs. capacity." Cloth rolls are securely fastened inside the steel housing. On the way to the cloth room, the car makes a 90 degree turn, as shown in* **Fig. 10** *(center). Note steel superstructure, spotlight on conveyor for night handling, and details of carriage.* **Fig. 11** *(right) shows a car of Beaumont duck entering the elevator shaft of the cloth room. It will be lowered to the ground floor and unloaded there before being returned empty to the weave room.*

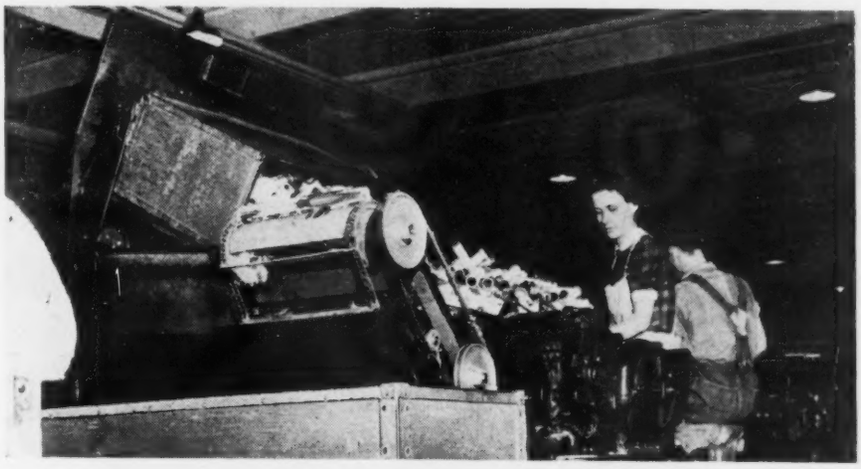

Fig. 12 through 14, *photographs from Joanna Cotton Mills, Goldville, S. C., illustrate a well-arranged method of handling bobbins from the card and spinning rooms.* **Fig. 12** *(left) shows closeup of operator feeding the Terrell bobbin machine. Former method, which required operators to pick up bobbins from portable boxes, is now avoided by the gravity chute which feeds bobbins to the operator. Box of bobbins is hoisted by elevator in rear.* **Fig. 13** *(left below), gives a front view of the bobbin bin and gravity chute. Note bobbins being dumped by hoist, and rising conveyor on right which is dropping clean bobbins into box.* **Fig. 14** *(below), reveals the height of the inclined gravity chute, and the details of the hoist. Note that arrangement of bobbin machine is at the juncture of the spinning and carding departments.*

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Clothing on WOOLEN CARDS Is Key to Good Yarn

HIGHLIGHTS: *Most modern of cards is ineffective without good clothing—New clothing should be examined prior to installation—Replace clothing when its efficiency is below 85% of that of new clothing—Large savings possible by investing in new clothing when old wire causes production lag.*

By W. J. CROFTS

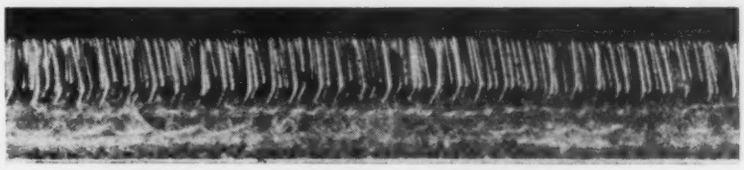

Fig. 1. When pitch becomes slack from long use, even though wire has good length, efficiency is only about 70%.

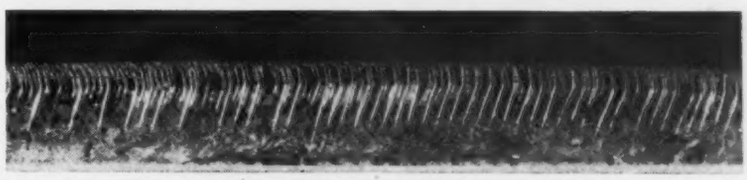

Fig. 2. Short wire with very weak pitch, such as this sample, does more harm than good.

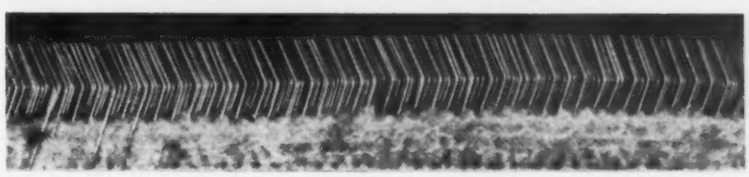

Fig. 3. New clothing, carefully inspected, rates 100% efficiency.

EFFICIENCY OF CARDING is more important to the woolen division of the textile industry than it is to any other division. The woolen card, to be efficient, must be able to take a heterogeneous mass of fibers of varying lengths and colors; comb out the fibers as straight as possible; blend the different colors together without objectionable specks; and, in the final operation, divide and form the carded web into many round, firmly condensed ends of roving that are uniform in size and weight, ready for the spinning or twisting operation. The operation of converting various blends of fibers into an acceptable sliver is almost wholly automatic on the modern card, and the mill that pays the closest attention to its cards and maintains them at a high state of efficiency is likely to be the mill that successfully meets competition.

The carding machine is merely a mechanical platform or foundation for the card wire which does the actual work. The fact that best results from a card are absolutely dependent on the condition of its clothing cannot be ignored. Without good clothing, made from first class materials and free from defective workmanship, the most modern carding machine becomes ineffective in producing yarn that will meet the test of competition. Without good clothing, carding costs rise, and quality of yarn deteriorates, causing a general rise in manufacturing costs in all the subsequent processes, not to mention an increase in seconds.

Without question, it is economical in the long run to have a solid, stable foundation for the comparatively delicate card wire. Fortunate is the mill that has cards with all-iron cylinders and true-running rolls—both of which prolong and improve the service of the clothing.

INSPECT NEW CLOTHING. Upon superficial inspection, all new card clothing looks alike. The wise carder, however, gives new clothing a careful, rigid inspection because, in spite of great care on the part of the manufacturer, defective card wire sometimes gets past the factory inspection.

Clothing should be inspected as follows: (a) Test the foundation for resiliency and firmness; (b) carefully observe the twill across the fillet to see that the points make reasonably straight lines; (c) look at the strip of clothing lengthwise to make sure the points of the wire form parallel straight lines; and—perhaps the most important test—(d) slide the finger tips lightly over the backs of the points of the wire to see if they have a smooth, glassy feel. If there is a "sandy" feeling, as when sliding the fingers over a fine file, this feeling may be due to uneven pitch or uneven set of the wire in the foundation—a defect which no amount of grinding will remedy.

If the foundation is firm yet resilient, the points of the wire show straight lines both ways, and the surface is smooth to the touch, then the clothing is satisfactory. A spongy, limp foundation will not support the wire properly. With such a foundation, de-

(*Continued on page 204*)

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WEIGHT CONTROL in Knitting Is Vital in Quality and Cost

HIGHLIGHTS: *Series of carefully controlled samples are made—Once optimum standard is selected, all future manufacturing must conform—Lay-out in cutting room should be economical of fabric.*

By ALFRED H. WESSLEN
Industrial Engineer, Ware Knitters, Inc.

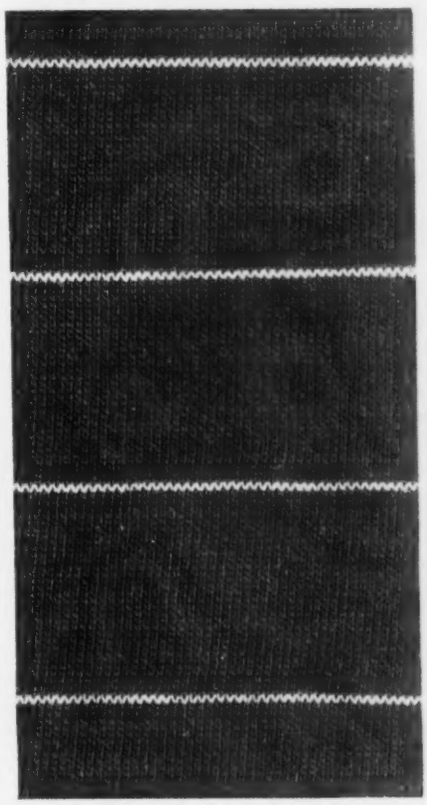
CONTROL OF WEIGHT is an essential function in manufacturing knit goods, as proper weight governs the following vital factors: Cost, appearance, and durability both to washing and to wear. How this weight control has been accomplished at the plant of Ware Knitters, Inc., is described in this article.

In the first place, one must have yarn of a good quality. A poor grade yarn can cause so many defects in knitting as to throw any predetermined weight standard out of control. It is also necessary that a standard knit construction be determined for fabric of a certain count yarn and a given-size knitting head.

SAMPLES SET STANDARD. The boss knitter, in conjunction with the plant engineer, conducts a series of test runs with a given yarn count. They start with the stitch set about as loose as will run without giving trouble in knitting. The yarn is set up on a creel with medium-size cones if possible. One cone carries yarn of an odd or contrasting color which will be readily visible in the knit fabric. Several yards of fabric are then knit and the distance in inches between two adjacent lines of the courses made by the contrasting color yarn recorded. The number of feeds on the head gives the courses for the measured distance. From the two figures, the number of courses per inch may readily be calculated.

The stitch is then tightened a certain amount on each feed, and another few yards are run off. This process is repeated until the stitch has reached the other extreme—too tight to run without excessive trouble. For each change in the tightness of stitch, the one odd-color cone is changed to another color, which difference identifies the various pieces during remainder of the tests.

The whole fabric is then processed in the usual manner and spread according to pre-determined width. The finished fabric is cut into pieces according to the number of trials and submitted to the superintendent and sales manager. They select the section which to them makes the best appearance and has the best hand. A sample roll of fabric of the stitch selected is then knit, and garments cut from it to determine how it reacts for size and to laundering tests. If the experiments are all satisfactory, the construction is established as a standard; and specifications are given to the various departments concerned in the number of yards per pound.



Typical sample run on circular machine with one feed of light yarn giving basis for calculating courses per inch.

This standard is the basis for control of the weight of this particular fabric. The knitting room uses the width between stripes, as determined during the first experiment, for a guide. Or if a solid- or natural-color fabric is being knit, an odd-color cone is set on the creel at the start of each lot and run for a few rings in order to compare the distance between rings to the original experiment. If the width of this ring is different from the standard, the stitch is tightened or loosened as circumstances demand.

CHECK AT FINISHING. The knitting room is, of course, the place to start the weight control. However, the finishing machine in the wet-process department is the first logical place to check it. On this machine, the fabric is spread to a certain width, and it is yarded as it is processed. Each roll has a knitting ticket on it; and from the knitted poundage noted there and the yards read off the yardage clock, the operator, using a table, determines the yards per pound. The accompanying table is similar to the one used by this machine operator. The weight of the roll to the nearest pound is taken from the left hand margin. From this weight, the operator traces across horizontally until he comes to the nearest number of yards as read off his yardage clock. The figure at the top of the column where he finds that yardage will give the yards per pound to the nearest tenth of a yard. This figure is then entered upon the knitting ticket.

The processing department overseer has a book of standards for each type of fabric which is kept up-to-date as to

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DIASTAFOR

A TRADE MARK OF STANDARD BRANDS

changes and new fabrics. The steaming machine operator is given the standard weight by his overseer before he starts a lot; and, if the actual yards per pound do not correspond, he notifies the overseer who in turn contacts the knitting room to check any similar fabric still in process.

In the cutting room, the weight control branches out into a new field of study. Here the original check on yards per pound merely helps in explaining a possible overage or shortage of fabric in laying-up and cutting. However, from a cost standpoint, the cutting room is the most essential point at which to set up weight control of knitted products systematically.

CUTTING LAYOUT. The first step in this new problem is to analyze the customer's order for the particular garment concerned; and, if possible, to group the order to conform with some definite ratio of sizes. In orders of large quantities, the dozens of each size required are reduced to some common denominator. As an example, suppose a customer orders 100 doz. garments in sizes 2, 4, 6, and 8, distributed as follows: 10 doz. 2s, 30 doz. 4s, 40 doz. 6s, and 20 doz. 8s. The simplified ratio, on the denominator of 10, would be 1, 3, 4, and 2.

A marker is then made with the correct assortment of sizes. In making this marker, a set of miniature patterns, cut to scale for size, are used. If from these experimental miniature markers it is determined that a much more economical lay could be made with a slight change in proportion of sizes, possibility of change may be taken up with customer for his consent. The above trial markers are usually made in the mill office by the industrial engineer.

When a satisfactory marker has been made out in miniature, it is sent to the cutting room; and a full scale marker is made in copy of the miniature. If any improvement is found possible, it is included in the full-scale model. In this way, the length is checked and any discrepancies are ironed out. A percentage is added to allow for bad fabric, end trim, etc. From the standard yards-per-pound issued for this type of fabric, a weight-per-dozen figure is determined and set as a standard in figuring costs.

From then on whenever this style is cut, the actual number of pounds of fabric used is posted on a report along with the standard pounds; and a gain or loss is calculated. This tabulation is summarized into a weekly report which goes to the superintendent, and excessive gains or losses are probed as to cause.

Actual Yards per Pound Chart for Use by Steaming-Machine Operator in Underwear or Outerwear Mill

Knit Lb.	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40
10	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
15	30	32	33	34	36	38	39	41	42	44	45	47	48	50	51	52	54	56	57	59	60	62	63	65	66	68	69	70	72	74	75	77	78	80	81
20	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108
21	42	44	46	48	50	53	55	57	59	61	63	65	67	69	71	73	76	78	80	82	84	86	88	90	93	95	97	99	101	103	105	107	108	111	113
22	44	46	48	51	53	55	57	59	62	64	66	68	70	73	75	77	79	82	84	86	88	90	92	95	97	99	102	104	106	108	110	112	114	117	119
23	46	48	50	53	55	58	60	62	65	67	69	71	73	76	78	80	83	85	87	90	92	94	97	99	102	103	106	108	111	113	115	117	120	122	124
24	48	50	53	55	58	60	63	65	68	70	72	74	77	79	82	84	86	88	91	93	96	98	101	103	106	108	111	113	116	118	120	123	125	127	130
25	50	53	55	58	60	63	65	68	70	73	75	77	80	83	85	88	90	93	95	98	100	103	105	108	110	113	115	118	120	123	125	128	130	133	136
26	52	55	57	60	63	65	67	70	73	76	78	81	83	86	89	91	94	97	99	102	104	107	109	112	114	117	120	122	125	128	130	133	135	138	141
27	54	57	59	62	65	68	70	73	76	78	81	84	87	89	92	95	97	100	103	105	108	111	113	116	119	122	124	127	130	133	135	138	141	143	146
28	56	59	62	65	67	70	73	76	78	81	84	87	90	93	95	98	101	103	106	109	112	115	118	121	123	126	128	131	134	137	140	143	146	148	152
29	58	61	64	67	70	73	76	78	81	84	87	90	93	96	98	102	104	107	110	113	116	119	122	125	128	131	133	136	139	142	145	148	151	154	157
30	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162
31	62	65	68	72	75	78	81	84	87	90	93	96	100	103	106	108	112	114	118	121	124	127	130	133	136	139	143	146	149	152	155	158	161	164	168
32	64	67	70	74	77	80	83	87	90	93	96	99	103	106	109	112	115	118	121	123	127	130	134	137	140	144	147	151	154	157	160	163	167	170	173
33	66	69	72	76	79	83	86	89	93	96	99	103	106	109	112	116	119	122	125	128	131	135	138	141	144	147	151	154	157	160	163	167	170	173	176
34	68	71	75	78	82	85	88	92	95	98	102	105	108	112	115	118	122	125	128	131	135	138	142	145	148	151	154	158	161	164	168	171	174	177	180
35	70	73	77	81	84	88	91	95	98	102	105	108	112	116	119	123	126	130	133	137	140	144	148	152	155	158	162	165	169	173	176	180	183	186	189
36	72	76	79	83	86	90	94	98	101	104	108	112	115	118	123	126	130	133	137	141	144	148	152	155	158	162	166	169	173	177	180	183	187	191	194
37	74	78	81	85	88	93	96	100	103	107	111	115	118	122	126	130	133	137	141	144	148	152	156	159	163	167	171	174	178	182	185	189	192	196	200
38	76	80	84	88	91	95	98	103	105	110	114	118	122	126	130	133	137	141	144	148	152	156	160	163	167	172	175	179	183	187	190	194	198	201	205
39	78	82	86	90	93	98	102	105	108	113	117	121	125	129	133	137	141	144	148	152	156	160	164	168	172	176	180	184	188	192	194	198	203	206	210
40	80	84	88	92	96	100	104	108	112	116	120	124	128	132	136	140	144	148	152	155	160	164	168	172	176	180	184	188	193	197	200	205	210	215	219
41	82	86	90	94	98	103	107	111	115	119	123	127	131	135	139	143	147	152	153	160	164	168	172	176	180	184	188	193	197	201	205	210	215	219	223
42	84	88	92	96	101	105	109	114	118	122	126	131	134	138	143	147	152	153	160	164	168	172	177	181	185	189	193	197	201	205	210	214	219	223	227
43	86	90	95	99	103	108	112	116	121	125	129	134	138	142	147	151	155	159	163	168	172	176	180	184	188	193	197	201	205	210	214	219	223	228	232
44	88	93	97	101	106	110	114	118	123	127	132	137	141	145	150	154	158	163	167	172	176	180	185	189	193	198	202	206	210	215	219	223	228	233	238
45	90	95	99	104	108	113	117	122	126	131	135	140	144	148	153	158	162	167	171	176	180	185	189	193	198	203	207	211	216	220	223	228	233	238	243
46	92	97	101	106	110	115	119	124	128	134	138	143	147	152	157	161	166	170	175	180	184	188	193	198	203	207	211	216	221	225	230	234	240	244	248
47	94	99	104	108	113	118	122	127	132	137	141	146	151	155	160	164	170	174	179	183	188	193	197	202	207	211	216	221	225	230	235	240	245	250	254
48	96	101	106	110	115	120	125	130	135	140	144	149	154	158	163	168	173	178	182	187	192	197	202	207	211	216	221	225	230	235	240	245	250	255	259
49	98	103	108	113	118	123	128	132	137	142	147	152	157	162	167	172	176	182	185	191	196	201	206	211	216	220	226	230	235	240	245	250	255	260	265
50	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270

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SHRINKPROOFING RESIN
Exhausted From Bath

HIGHLIGHTS: *New emulsion uses old techniques and conventional machines—Two methods for applying the resin to knitted wool fabrics after dyeing—Curing of resin not required.*

By I. G. SANFORD

A RESIN which exhausts out of the bath and which requires no after-curing imparts shrinkage control to knitted wool fabrics, such as hosiery. Application can be made in conventional equipment to produce a fabric which retains its original hand, despite the addition of about 4 to 6% of resin.

The application of the resin in an emulsion is accomplished by exhaustion with acid and salt, similar to dyeing. Two methods can be followed in applying the polymerized resin emulsion, which has been named Dur-Lana*. Application, made after dyeing, affects the shade of some colors, similar to the effect of durable water repellents; but, as in the case of water repellents, the shade can be controlled by making allowances in the dye bath.

USUAL METHOD. Goods to be treated should be rinsed thoroughly after dyeing. A fresh bath is prepared and heated to 160° to 170° F., then 10% of 80% acetic (or 15% of 56% acetic) is added and run 5 min. The Dur-Lana emulsion is then added to the bath and run 5 min. From 20 to 30% calcined Glauber's salt (or common salt) is dissolved and added in four equal portions at 5 min. intervals, commencing 5 min. after the emulsion is added to the bath.

The bath should be practically clear after the last addition of salt. If not, it may be necessary to add more salt to complete the exhaustion. When the exhaustion is complete, the bath is dropped, and a fresh bath is prepared at 100° to 110° F. Enough ammonia is added to this bath to give a pH of 8 to 9 after running 5 min.

When the goods are completely neutralized, they are rinsed once in water at 110° F. This is followed by a rinse in 1% acetic acid for 5 min. at 110° F., then another rinse in 4% of a material such as WARCO 945AS, followed by extraction and drying. Either calcined Glauber's salt or common salt may be used, the necessary amounts of each being about equal. Glauber's salt is preferred due to its better solubility.

ALTERNATE METHOD. An alternate method for the application of Dur-Lana by exhaustion follows. The scoured or dyed material is rinsed thoroughly. A fresh bath is prepared containing 20 to 30% common salt (based on the weight of the goods) at 140° to 160° F. The material is treated in this bath for 5 min. at which time the required amount of emulsion is added to the bath. This is run for 10 min., and then 3% acetic acid (56%) is added to the bath.

The bath is run for 10 min.; and if at this time the resin is exhausting satisfactorily, no further additions are necessary. Exhaustion is evident when the milky-white solution clears. If the bath does not seem to be exhausting, however, it may be necessary to make further additions of acetic acid. On properly prepared goods, it is not usually necessary to use more than 6% of acid. Rinsing follows.

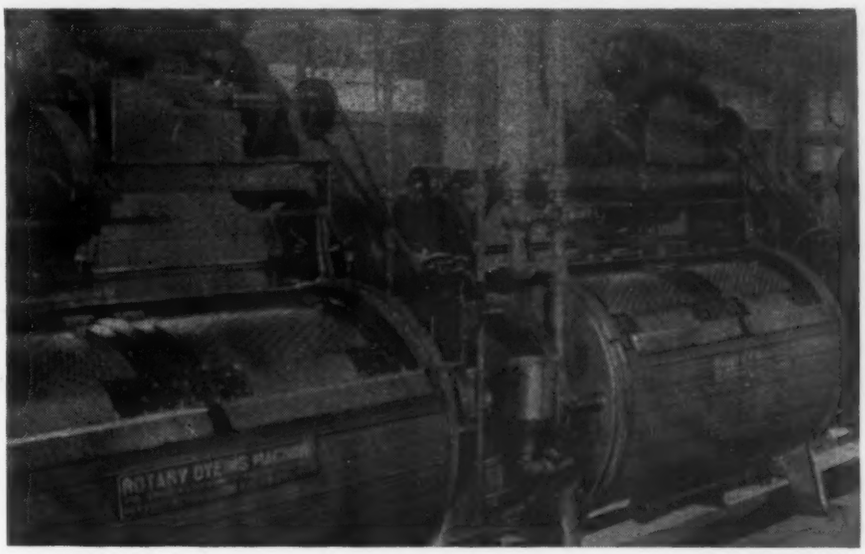
The amount of emulsion to be used is based on the weight of the wool to be treated. In the case of a mixture of wool with cotton, the percentage

(*Continued on page* 240)

* Trademark name of Warwick Chemical Co.

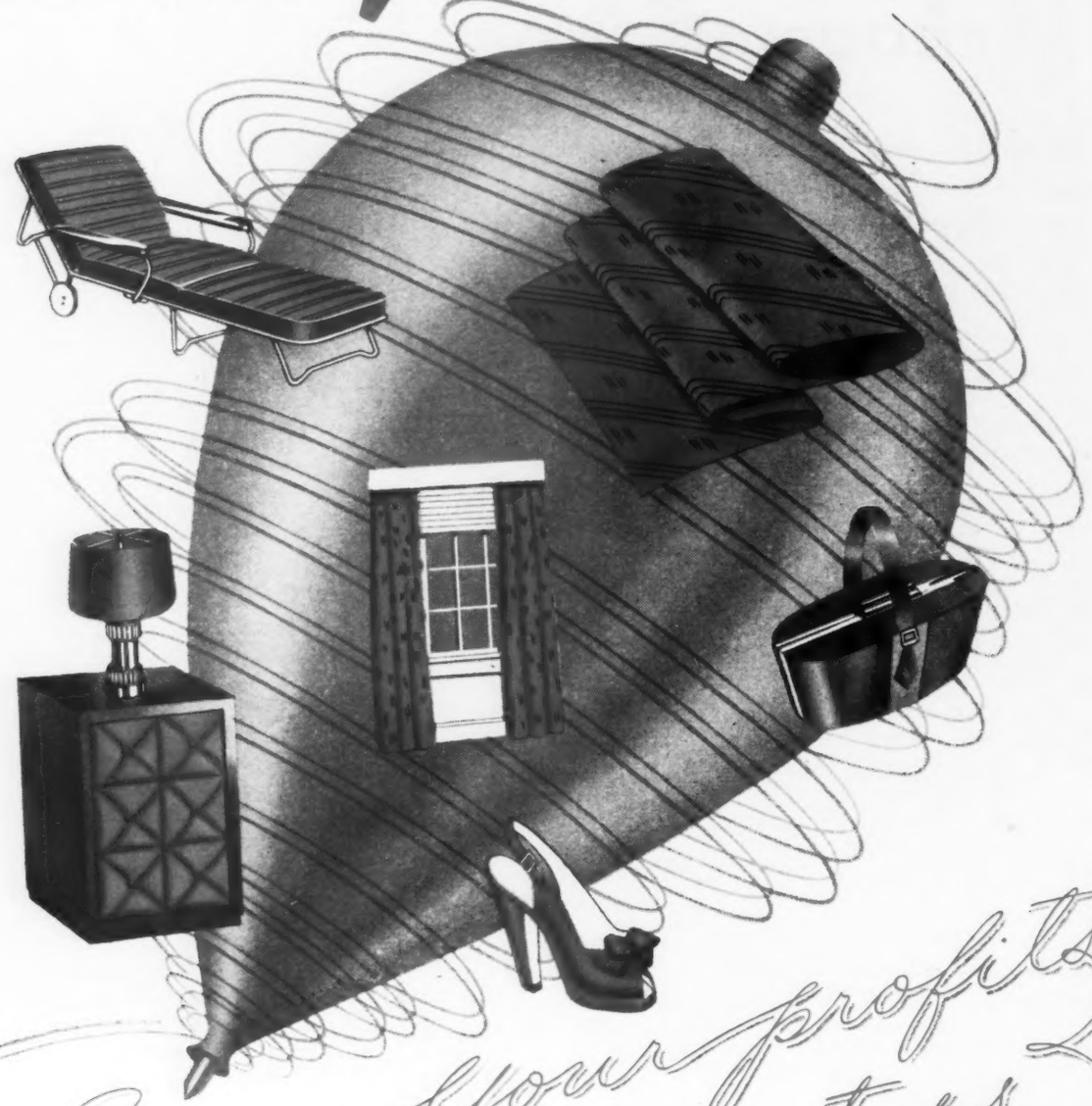
TABLE OF PROPERTIES

Nature:
Emulsion of polymerized resin (nearly a collodial solution).
Solids:
25% (active)
Sp. Gr.:
0.98
pH:
7.5 — 8.5
Effect of Acid:
Agglomerates
Effect of Alkali:
Normal
Color:
Creamy tan to gray
Particle Size:
½ to 10 microns



Conventional rotary dyeing equipment or paddle-type machines are used for applying shrinkproofing resin.

Firestone *Velon** TEXTILE FIBRE



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DIELECTRIC HEATING
Cuts Twist-Setting and Drying Time

HIGHLIGHTS: *Close control of heating, from small temperature rise to complete drying, is easily achieved —One 125-kw. heater delivers 425,000 B.t.u. per hr.—Dyed cotton yarn on tubes dried in 15 to 30 min.—Dielectric heaters used for setting twist in wool yarns, and in rayon crepe and tire cords—Costs easily figured.*

By C. N. BATSEL
Radio Corp. of America

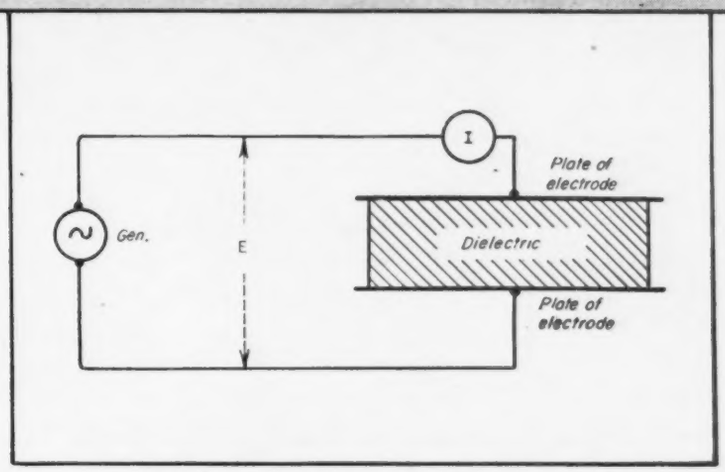

Fig. 1. Dielectric heating is accomplished by placing material between two metal-plate electrodes.

HIGH-FREQUENCY HEATING has many advantages when it is desired to heat certain materials quickly, particularly packages which require considerable time for heat from conventional sources to penetrate to the interior. The degree of heating achieved may be anything desired from a small rise in temperature to that required for complete drying of wet materials.

This type of heating, as applied to textiles and other non-metals, is known as dielectric heating. In its simplest form, it is accomplished by placing the material between two metal plates or electrodes which are, in turn, connected by means of electrical conductors to a high-frequency generator (Fig. 1). The amount of heat generated in the load is dependent upon its electrical properties, the frequency of the applied voltage, and upon the strength of the electric field between the plates. The strength of this field is, of course, proportional to the electrical voltage between the two plates. In order that the load voltage may be within some practical range, frequencies in the megacycle range are necessary for most dielectric-heating applications.

One may reasonably ask, "Why not go to still higher frequencies?" There are several things that limit practical use of the upper frequencies. One is the problem of generating high power at extremely high frequencies. Another is the problem of "tuning" a large load (which represents capacity in an electrical circuit), so that power may be transferred from the generator. Attempts are being made to standardize frequencies for industry. Frequency bands centered at 13.7, 27.4, and 40.8 mc. have already been recommended. Some types of loads require an even lower frequency, whereas others require substantially higher frequencies. Standardization on a very limited number of frequencies, therefore, appears to be neither practical nor desirable from an industrial viewpoint.

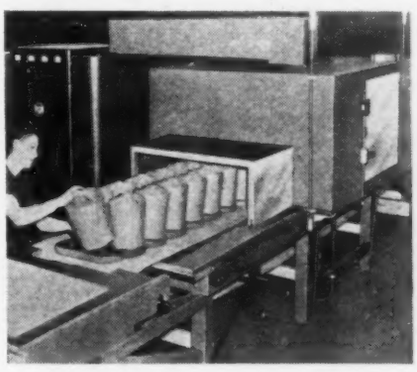

Fig. 2. High-frequency twist setter for rayon tire cord will handle 18,000 to 25,000 lb. per hr.

Commercial generators now being built are capable of delivering power from 1 kw. to 125 kw. and over in single units. A 125 kw. unit will deliver energy equal to 425,000 B.t.u. per hour. This range of sizes provides generators suitable for many applications.

Various applications to textiles, including cotton, rayon, nylon, and wool, have been the subject of studies in progress for several years in the RCA Laboratories at Princeton, N. J. and in RCA Victor's applications engineering laboratories in Camden, N. J.

RCA electronic-power generators are in production use in various branches of the textile industry. Such generators are used for drying rayon yarn in cake form and for setting twist in rayon tire cord and in small-denier

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1240

TYPICAL TESTS:

	No. 8	No. 12	No. 16	No. 20	No. 24	No. 32	No. 64
Flash Point, Clev.°F.	315	340	360	380	435	500	540
Viscosity 100°F. SSU	358	3390	5425	17160	49750	167500	347600
Viscosity 210°F. SSU	52	154	210	528	1060	3065	6075
Viscosity Index	71	75	80	100	104	115	119
Pour Point °F.	—30	—5	0	10	20	40	55
Solid Point °F.	—35	—10	—5	5	15	35	50
Gravity, API	35.4	32.0	31.0	29.8	27.9	26.0	25.0
Spec. Gravity	.8478	.8654	.8708	.8772	.8877	.8984	.9042
Lbs. Per Gallon	7.059	7.206	7.251	7.305	7.392	7.481	7.529
Molecular Weight	370	530	600	700	900	1200	1500
Neut. Number	.10	.10	.10	.05	.02	.01	.01
Sap. Number	.3	.3	.2	.2	.2	.1	.1
Carbon %	0	0	0	0	0	.01	.02
Sulphur %	.01	.01	.01	.02	.02	.02	.04
Sligh Oxidation Test	0	0	0	0	1	1	2
Color ASTM (Max.)	1½	1½	1½	2	2	2	2
Dielectric Strength	35,000	35,000	35,000	35,000	35,000	35,000	35,000

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rayon yarns. They are also useful for various treatments of cotton yarns, and for heating and drying wool.

High-frequency heat can dry nylon on size tubes and can set twist in small-denier nylon yarns. Other uses include drying tubes of yarn which have been dyed, and drying rayon cakes after the first washing, and later when rewet for sizing or other purposes.

DRYING DYED YARNS. An important application, one of the first to be made, was the drying of cotton yarns on tubes, after dyeing. This usually is a 16- to 20- hr. job when done by hot air. Numerous tests have been made for several companies in the drying of dyed yarns on tubes, some of which were centrifuged partially to extract the water, while others were not centrifuged.

Typical test records for yarns wound on perforated enameled plastic tubes, and not centrifuged, show that one weighing 1553 g. wet dried to 811.5 g. in 25 min. A second tube, having a wet weight of 1885 g., was dried to 750 g. in 30 min. Two other tubes from which water had been reduced by centrifuging to around 50% of their dry weight were dried in 16 min.

The quality of the dried yarns in each of these tests was reported to be excellent.

Cloth in roll form has also been successfully dried with high-frequency heat, and rolls of cloth which have been impregnated with certain resins have been successfully cured using high-frequency heat.

High-frequency drying of multiple ends has been accomplished experimentally with a miniature beam and electrode system. These experiments are being made with yarns of about 60 den., as well as heavier yarns, such as tire cord.

SETTING TWIST IN RAYON YARNS. One of the earliest commercial applications of high-frequency power to the treatment of rayon yarns was in setting the twist in tire cord. A typical installation is shown (Fig. 2). This unit will handle from 18,000 to 25,000 lb. of tire cord in 24 hr.

As soon as conditions permitted, experimental work was started on the setting of twist in low-denier rayon yarns, including crepe yarns. This application has been successful and several installations are now operating on production work. Precaution against excessive drying of the yarn can be taken by providing for humidity control of the heating chamber or by wrapping or encasing the yarns in boxes while heating. Bobbins with either metal or plastic ends can be successfully heated.

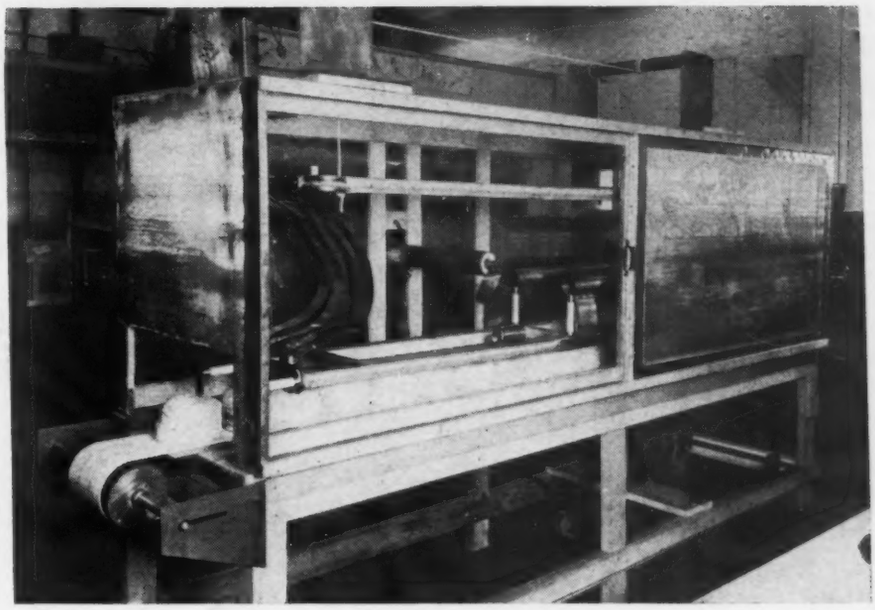

Fig. 3.. Experimental dryer dries 1-lb. rayon cakes in 30 min.

The time required to set twist with high-frequency heat varies with the type of yarn, but it generally requires 6 to 10 min. at temperatures of 160 to 180° F.

The efficiency of high-frequency installations usually runs around 50 to 55% of the power input to the generator; i.e., 50 to 55% of the power drawn from the 60-cycle power line is actually converted into heat within the load material. This high efficiency results because of the absence of much of the thermal loss associated with the other methods of heating which are usually used.

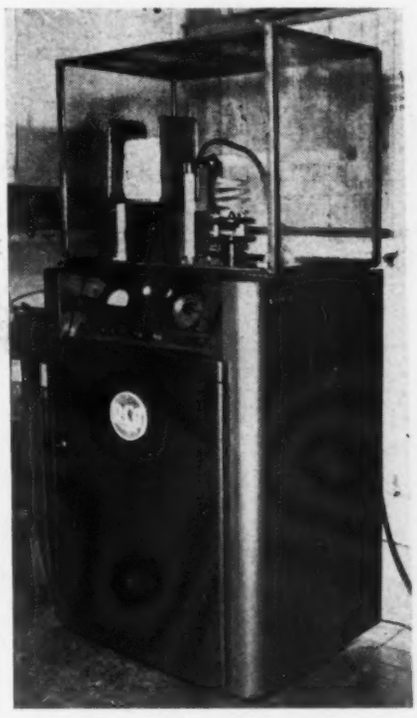

Fig. 4. Two-pound tube of 40-den. sized nylon is dried in 2½ to 3 min. in this experimental machine.

DRYING RAYON-YARN CAKES. The drying of rayon cakes is another application for which high-frequency power has definite advantages. A major factor is the necessity of drying the cakes uniformly throughout. Air drying is difficult and slow, and careful control is necessary to maintain a uniform yarn.

Preliminary work on drying cakes with high-frequency heat was done several years ago and the encouraging results led to further tests. A laboratory model conveyor system (Fig. 3) was constructed and cakes from several rayon plants were dried. All tests resulted in an improved yarn, but some variations occurred in quality. It is believed that proper control of the process will result in a more uniform and better quality yarn. The present status of this application is in the pilot-plant stage.

Most of the rayon cakes dried have been 1 lb. (dry-weight) cakes of various denier yarns. These cakes, after the first washing, have contained around 150% water, based on dry weight, or 1½ lb. of water per cake. Conveyors are used to carry the cakes between the electrodes and provisions are made to carry off the steam. Drying is accomplished in approximately 30 min.

Drying of rewet cakes presents practically the same problems as the orig-

(Continued on page 216)

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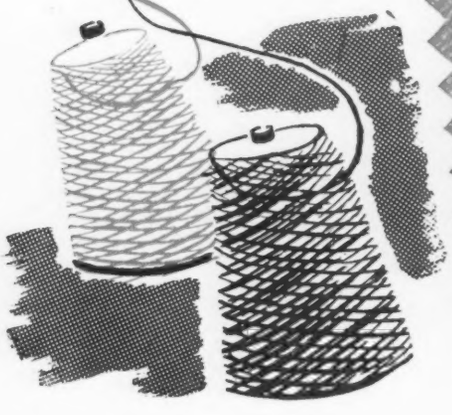

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It Pays To SPIN for QUALITY

HIGHLIGHTS: *A mill of 51,000 spindles has about 300 spinning-end breaks each 10 min. of operation — New teaching methods promote quality workmanship — Technique of getting up ends improved by use of mock spindle.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

A SURVEY of the spinning room for just ten minutes of the day shows that the questions of how to do a job, why it should be done precisely, and what effects a poorly done job has on the yarn itself are vital to spinning quality. Every ten minutes of the day in a medium-yarn spinning room of 51,000 spindles, there are approximately 300 end-break repairs, 2,200 or more yarn bobbins doffed, 200 or so doffing piece-ups, and countless other detailed tasks done. Each of the 2,700 or more operations, unless properly done, causes bad work or machine stoppage at later processes; and the operations themselves cost approximately 200 man-minutes of actual working time, since there are approximately 20 operators repairing breaks, creeling roving, doffing, or piecing bobbins at all times in the spinning room.

Thoughtful overseers of spinning, in search of quality, stress training and supervision of the individual employee as opposed to mass or group training, and emphasize the importance of the individual in the performance of the many detailed operations in the spinning department. Otherwise, they ask, is it any wonder that drops in spinning quality occur suddenly and without traceable cause?

If it were possible for the overseer of spinning to stand in the center of the spinning room and personally supervise all detailed operations, the maintenance of yarn quality would be a simpler undertaking. With conditions as they are, neither the overseer nor his assistants can personally supervise the numerous detailed operations proceeding simultaneously in a dozen different localities. Therefore, they must depend instead upon properly selected and trained personnel which is brought up to date from time to time on the facts behind spinning quality.

QUALITY FACTS. Based upon the statistics already given, the general facts behind spinning quality indicate (1) that maximum yarn quality cannot be obtained by mere dependence upon machinery performance, however excellent that may be; (2) that superior machinery performance, obtained at a cost of $50 or more per spindle in some instances, may be partly destroyed by careless personal handling; and (3) that personal handling of work should be taught carefully and repeatedly to both new and old employees.

Maximum control of quality calls for considerable instruction and for an overseer of spinning who is a teacher. Mills which have centralized instruction or training departments are in a fortunate position; yet, the intimate and conclusive control of operation details for maximum quality requires the active participation of the departmental overseer.

A sample spindle called a "mock-up," Fig. 3, is used in one large spinning room to train new employees how to repair an end break and to persuade experienced help to be more quality conscious. New operators are tried at the mock-up, since its use eliminates the loss in production and

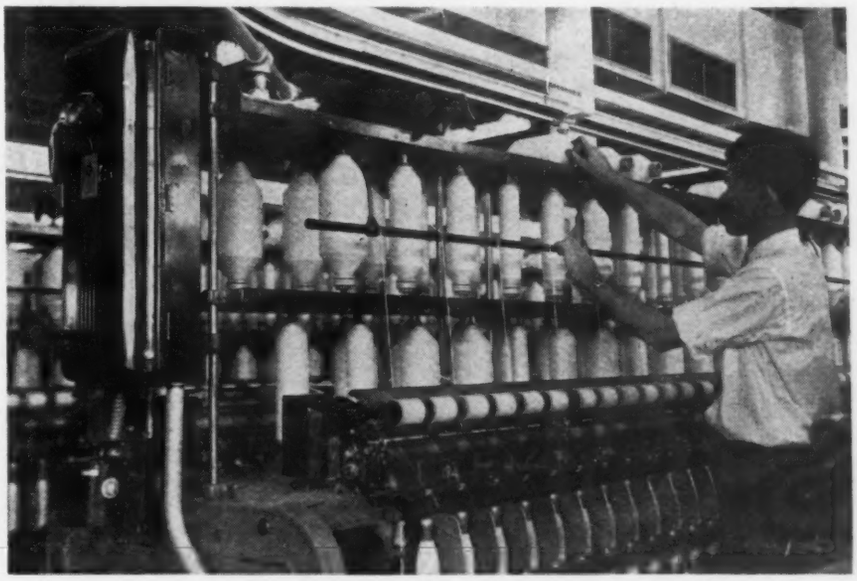

Fig. 1. Every 10 min. of the day, there are 2,700 or more possible causes of yarn defects in a spinning room of 51,000 spindles. Of these possibilities, 300 are spinning-end breaks. Unless spinners, doffers, cleaners, and learner spinners have good work habits and are taught precise methods, these possible causes may become actual causes of yarn defects and machine stops in spooling, warping, slashing, and weaving.
Courtesy, Carrier Corp., Coxe, Greenville, S. C.

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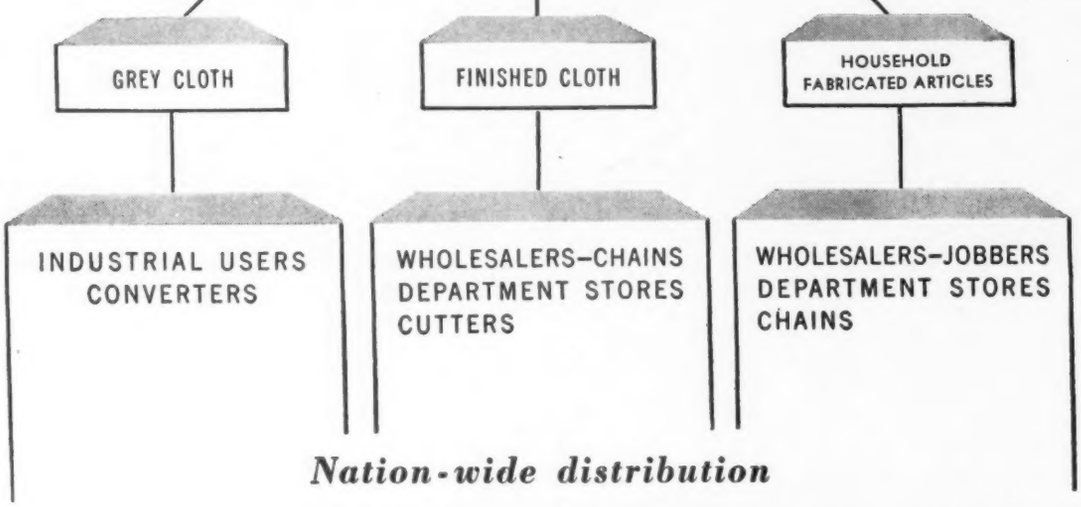

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quality which exists when untrained employees are permitted to start their training on production equipment.

The mock-up consists of a wooden frame which encases a spindle, ring holder, ring, thread guide, and pair of drafting rolls. It may be set on a table of convenient height and bolted or nailed into position. Old top rolls are cut in half, the halves fastened in a wooden frame, and a strand of roving inserted between the halves to obtain the effect of drafting rolls.

END BREAKS. When a bobbin of yarn is placed on the spindle, a fairly good picture of the task of repairing an end break is obtained without going into the spinning room. It is by no means a complete picture, since engineers at various times have estimated that there are from six to twelve or more different ways to repair a spinning-end break, depending upon the position of the ring rail, size of bobbin, build, and other factors.

However, another important reason for using such a mock-up, from the standpoint of yarn quality and precise performance, is that new operators can more effectively be shown at the beginning of their training how to twist up an end rather than to dab up the end, and how to use the hands efficiently.

Ordinarily, the operator would be shown samples of twisted and dabbed ends, Fig. 4, and given the reasons why a twisted end with a ½-in. splice is superior to a twisted end with a shorter splice and to a dabbed end of any type. The ½-in. splice is stronger than shorter splices, and the extra length of yarn is not objectionable from the standpoint of yarn appearance. The dabbed end, though strong enough, is of course too bulky to pass snickplates or other tension devices.

IMPROVED METHOD. By training operators to use the left hand, which is normally idle at the moment the right hand pieces the end, the overseer using the mock-up has developed an improved method of repairing end breaks. The actual routine of getting up an end as taught the new operator includes: stopping the spindle, Fig. 5 (page 147) at a convenient point except at the top or bottom taper which of course would cause a slough off at the spooler should the spinner mar the alignment of threads; finding the loose end of yarn and threading the guide with the right hand, Fig. 6; looping the traveler with the left hand, Fig. 7; and placing the end against the roving strand with a twisting motion from the thumb and forefinger of the right hand, simultaneously bringing the left hand to the smooth boss of the front steel roll, Fig. 8. The last motion of the left hand consists of wiping the lint from the smooth section of the steel roll, and is done simultaneously

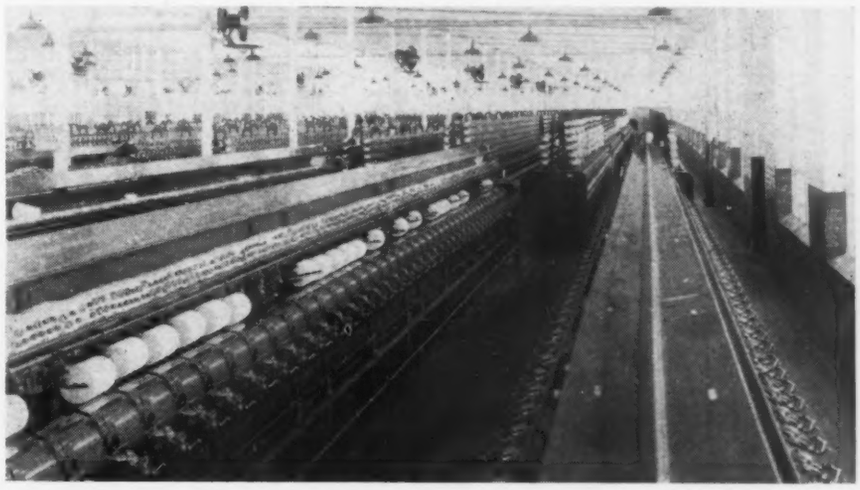
MATERIALS COST

24-oz. Slubber	12-oz. Speeder	6-oz. Spinning	1-lb. Cheese

SPINNING IMPERFECTIONS COST

Type	Machine Stopped	Imperfection Repaired by	Slashing, Weaving or Knitting Results	Spinning Operator Responsible
Dabbed End	Spooler, winder, or loom	Spooler-hand or weaver	Stops or cloth imperfection	Spinner or Doffer
Oily Yarns	None	Yarn or cloth inspector	Imperfection	Oiler, spinner, cleaner
Waste in Yarn	Spooler, winder, warper, loom	Spooler-hand or weaver	Stops or cloth imperfection	Spinner or cleaner
Tangled Bobbin	Total loss of 16c			Spinner or Doffer
High Bobbin	Total loss of 16c			Spinner or Doffer

Fig. 2. The facts behind spinning quality are shown by this cost and quality chart prepared by an overseer of spinning for a large spinning room. With such detailed information displayed in attractive form, this overseer has less trouble impressing upon spinning employees the importance of their responsibility for quality.



Spinning-room workmanship is clearly revealed at the winder or the spooler. Without the winder's tension device or the spooler's snickplate, many of the imperfections in cotton yarn would go into the weave room or knitting mill. At best, however, the winder or spooler can merely substitute a knot for the imperfection, which cannot be considered a cure for poor workmanship. Precise methods and good work habits in the spinning room offer a better solution.

ROOM TO GROW . . .

It's one of Nature's first laws . . . seeking room to grow. And for expanding industry, room to grow is a basic principle. But to grow healthfully, rapidly and profitably industry must have more than just room. It must have those advantages found so abundantly in Norfolk and Western territory, a vast, rich area between the Midwest and the Virginia Seacoast and midway between the North and the South.

This area offers raw materials and natural resources galore, abundance of pure water, ample power and highest quality all-purpose bituminous coal, intelligent native labor, a tax policy that's friendly to industry, plus the Norfolk and Western Railway's unexcelled rail service and the year-round ice-free Port of Norfolk, which puts you right next door to world and domestic markets.

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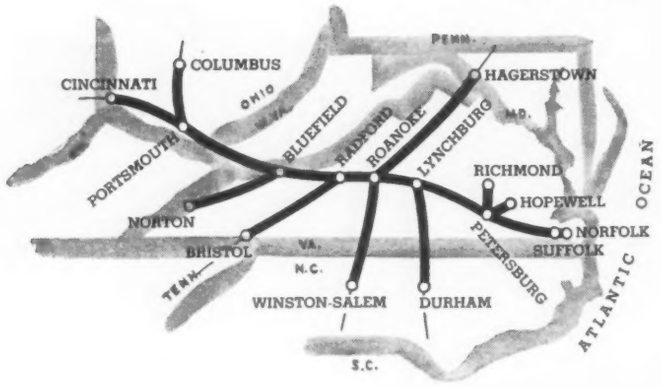
In short, Norfolk and Western territory is an ideal place to live, to work, to locate your plant . . . and grow.

Hundreds of industrialists have already discovered the numerous advantages of this important territory. For detailed and confidential information, write to the Industrial and Agricultural Department, Norfolk and Western Railway, Roanoke 17, Virginia.



Norfolk and Western RAILWAY

FOR BETTER PLANT LOCATIONS

with the right-hand motion which pieces the end to the roving.

Steel-roll cleaning is usually done by a special crew; and the new method permits the spinner to do the cleaning of the front steel roll at no extra effort to her, since the left hand usually remained idle at this point of the oper-

(Continued on page 212)

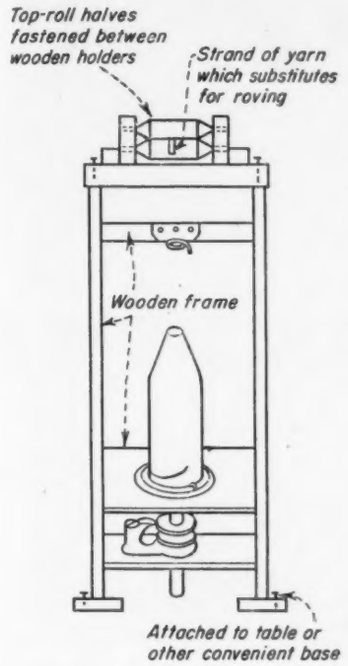

Top-roll halves fastened between wooden holders
Strand of yarn which substitutes for roving
Wooden frame
Attached to table or other convenient base

Fig. 3. A mock ring-and-spindle assembly is used by an outstanding spinning department as a means to acquaint learners with the job of repairing an end break. Engineers estimate that there are many different ways to repair a broken end, and the use of the "mock-up" permits the learner to find one simple way to do the job before going into the spinning room. The mock-up further permits the overseer to teach an approved method, cuts training time, and eliminates some of the cost involved in training a learner on productive equipment.

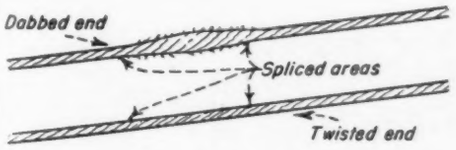


Fig. 4. One of the first things taught learner spinners and emphasized to new but experienced employees is the difference between the dabbed and the twisted end. The above is a copy of a drawing used in one spinning room to show employees, both new and old, what happens to fine combed yarn when ends are dabbed rather than twisted.

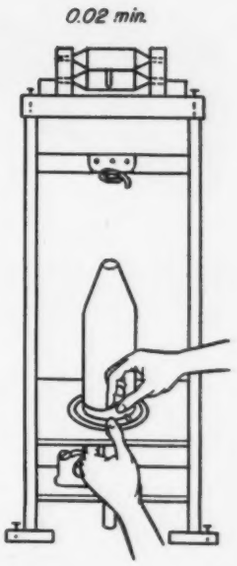


Fig. 5. In using the mock-up, the overseer breaks down the job of repairing an end break into a sequence of simple steps. The first step illustrates how to locate the loose end with the right hand and hold the bobbin with the left hand. The time necessary to complete this operation on the mock-up is 0.02 min.

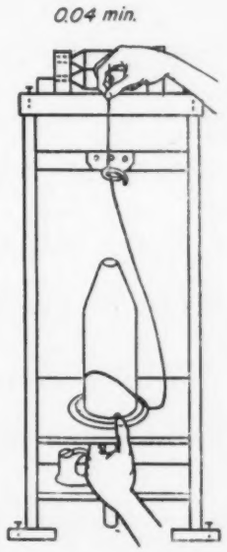


Fig. 6. The operator threads the guide with the right hand and simultaneously locates and positions the traveler with the left hand. Time expired, 0.04 min.

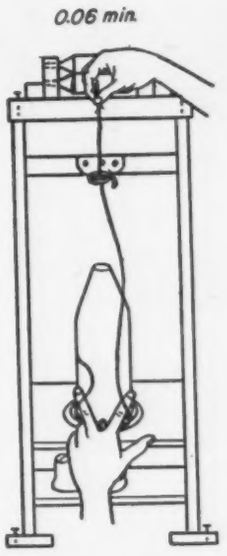


Fig. 7. A loop in the yarn is drawn with the left hand and placed under the traveler. Time expired, 0.06 min.

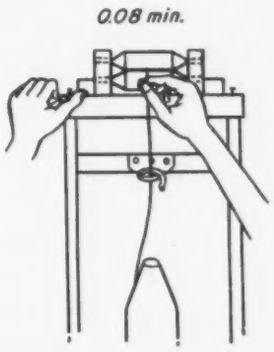


Fig. 8. The loose end is pierced to the roving strand with a twisting motion between the right thumb and forefinger. At the same time, the left hand is brought to the smooth boss of the front steel roll and this portion of the roll is cleaned. Thus, the left hand, normally idle at this sequence, is employed to do a job which usually requires special cleaning crews. Old spinners were taught this method to eliminate extra cleaning and to improve frame housekeeping.

A NEW SURFAX

THAT IS BOTH A SOFTENER AND A SANFORIZING AID

Especially useful in finishing heavy cotton fabrics

Formerly it was necessary in finishing fabrics such as denims or coverts to use an oil softener for proper feel and finish, then a re-wetting agent to assist in sanforizing. SURFAX "S" does both jobs. This new member of the Surfax family is non-oxidizing; fabrics treated with it will not discolor nor become rancid when stored.

You'll find it helpful, too, in finishing knitted fabrics such as underwear cloth, which requires a soft feel and a high degree of absorbency.

For a copy of new folder describing uses and application of SURFAX "S", write E. F. Houghton & Co., Philadelphia or Charlotte.

HOUGHTON'S SURFAX "S"

BETTER FIT Aim of Hosiery Measuring Device

HIGHLIGHTS: *Semi-automatic machine measures four factors—Instep girth important—Three width standards suitable for 95% of cases.*

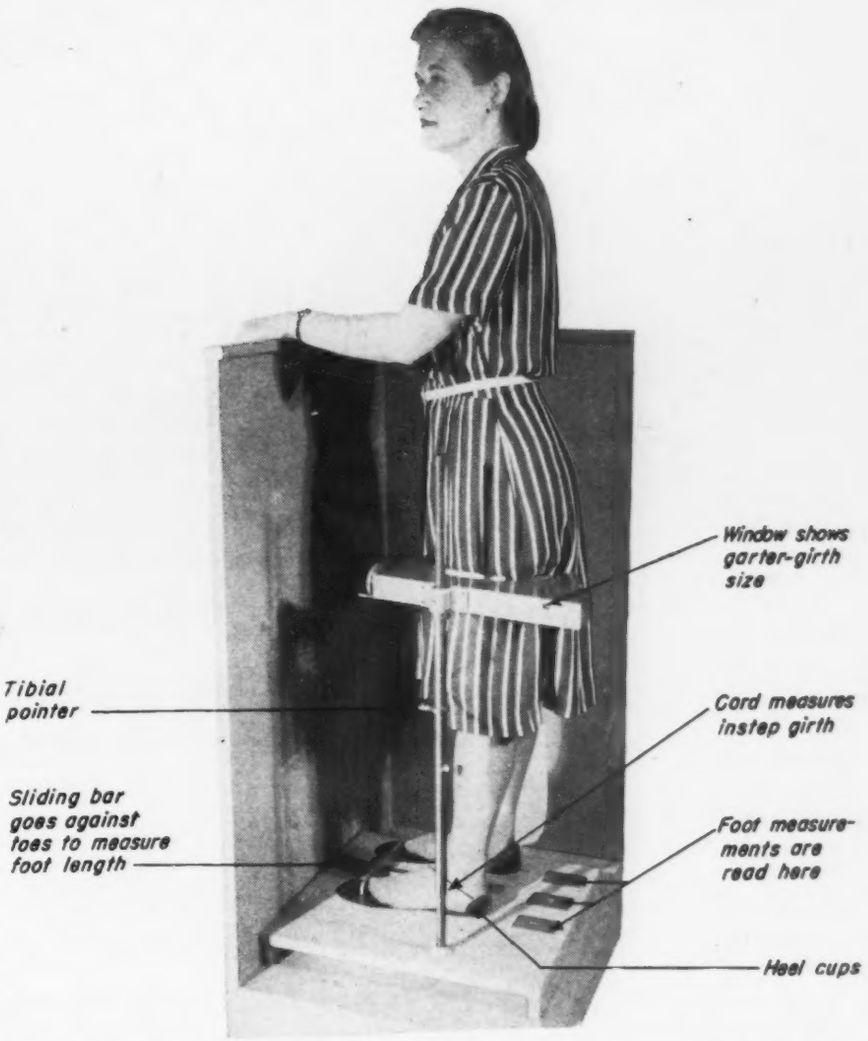
By WARREN P. SEEM
Research Engineer, United States Testing Co.

BETTER UTILIZATION of the flexibility of full-fashioned knitting machines to produce the one thing they are specifically designed to give—fit—is the chief aim of the Universal Hosiery Fitting Measure program (U.H.F.M.). A foot and leg measuring device is a necessary part of the program [described in the March issue of TEXTILE WORLD].

Foot and leg measurements are not always in harmony, and this lack of relationship causes many misfits and much poor wearing of full-fashioned hosiery. Based on 10,000 leg measurements made by the U. S. Department of Agriculture, a study shows that mills can confine themselves to three width-standards for 95% of their production as follows:

Width A, Small	28%
Width B, Normal	55%
Width C, Large	12%
In and Out Sizes	5%

In the foregoing, width *B* is the normal length and width size, therefore only two additional width sizes are called for by the U.H.F.M. proposition.

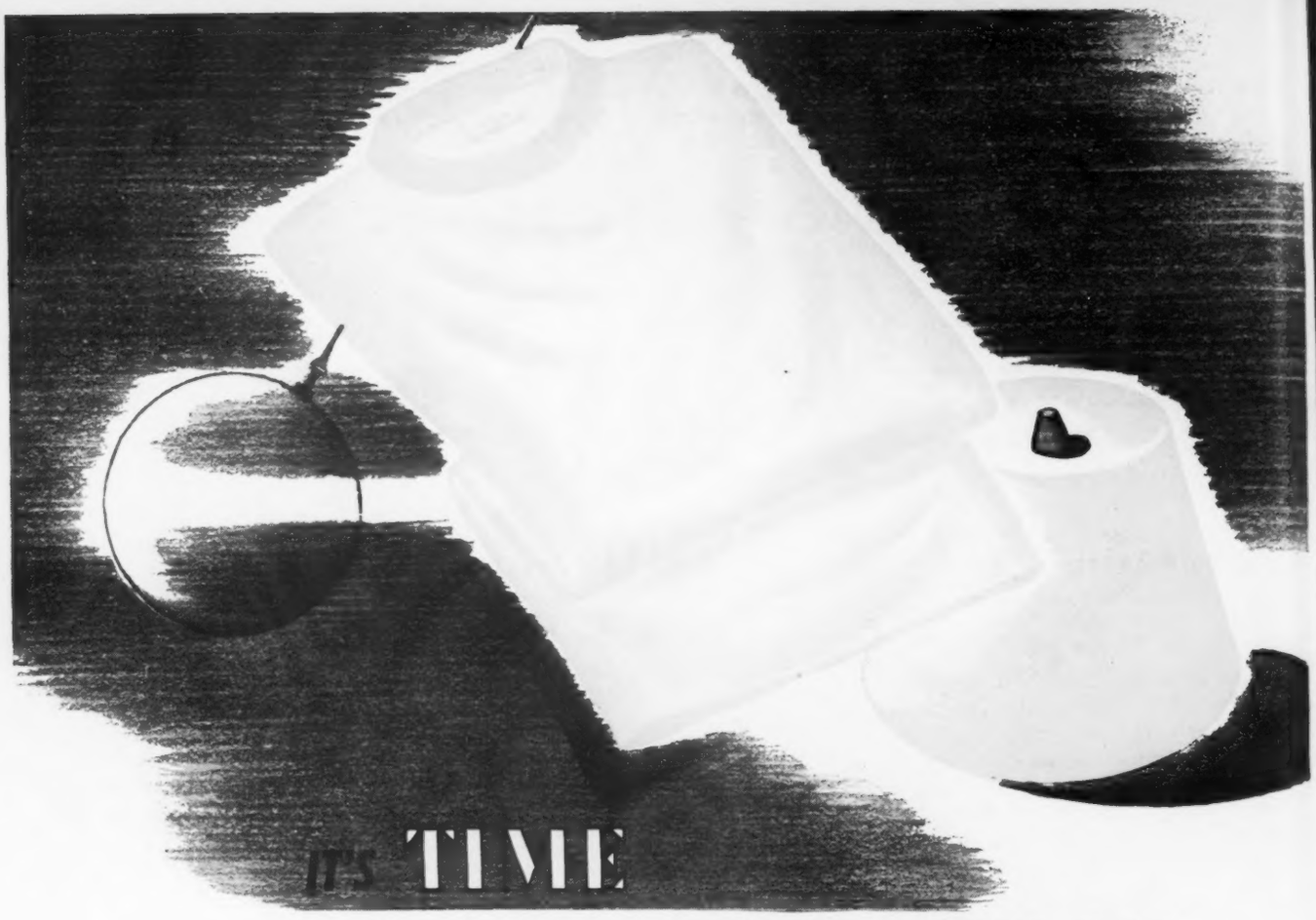

Window shows garter-girth size
Tibial pointer
Cord measures instep girth
Sliding bar goes against toes to measure foot length
Foot measurements are read here
Heel cups

Semi-automatic measuring device. *Garter height is 7½ in. above tibial height, indicated by the pointer, and is read on the pole at the top of the garter jaw.*

INSTEP FIT. The instep line is of considerable importance to proper fit. The instep girth, the widest part of the foot, is the end of the leg and the beginning of the foot. On conventional sizes, the girth ranges from 10½ to 13 in. On the U.H.F.M., it represents the dividing line between the leg and foot; while on the conventional legger-footer stocking, this measurement is also the joining line between the leg and foot. On the round-heel, single-unit full-fashioned stocking or on circular knit, there is no joining line; and one must consider the relation of the narrowing points and racking-out points to center the stocking on the heel ball and measure the distance from the gusset center to the instep line on U.H.F.M. and maintain this distance when measuring the length of the foot and leg. The length of the high splicing also aids in centering the stocking pocket on the heel ball.

The effect of a low instep is to cause loose fabric to gather into the crotch of the instep and appear as pleats or bagginess. The effect of a high instep is to cause strain, discomfort, early rupture, and consequent runners. The A (small) instep girth is 11½ in.; the B (normal) is 12 in.; the C (large) is 12½ in. Extreme girths measure 13 in. and over. The instep girths cross each other, so that it is necessary to know the girth size as well as the foot length and area to give good fit in the foot of the hose.

FOOT FIT. The fitting action of the stocking on the foot follows: If a stocking with a 9½-in. foot length and a 12-in. instep girth is drawn on a 9½-in. by 11½-in. foot, loose fabric is caused to gather in the instep crotch and produce pleats. Or if a 9-in. by 12-in. stocking is used on the 9½-in.



IT'S TIME

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From the careful selection of long staple cotton through painstaking combing, twisting and finishing, Time is poured into its smooth lustre, its increased strength until it finally emerges... Hampton Durene.

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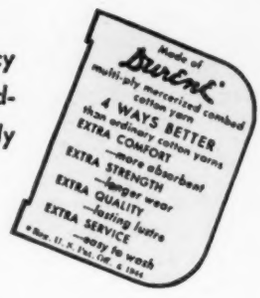
TIME . . is always on your side with HAMPTON Durene.

The lasting lustre, longer wear, higher absorbency and easier washability of your Durene knit products will give them distinct advantages in the highly competitive peace market that lies ahead.



Hampton Durene

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by 11½-in. foot, the 12-in. instep spreads into the length and gives a good fit on the 9½-in. by 11½-in. foot. Likewise, if a 10-in. by 12-in. stocking is drawn on a 9½-in. by 12½-in. foot, it also gives a good fitting.

As a stocking has approximately 16% stretch in length and from 25% to 40% in width, a *B* (normal) stocking can be stretched on a C (large) leg; but it becomes tighter and shorter in length; and, if extreme, the practice causes distress, loss in fabric recoverability, early ruptures, and low durability. A *B* (normal) stocking can always be drawn on an A (small) leg; but it becomes from 2 to 6 in. longer, stretches the stockings (at times all the way from instep to knee), draws the tighter part of leg into the upper weaker and wider calf area and draws the leg and welt joinings and shadow welt fabric up into the garter area.

The excessive width of a stocking makes it necessary to garter tighter, so as to hold a snug fit at the knee. The lack of fabric strength and other conditions cause early ruptures and consequent runners.

A set of substitute tables are supplied with the fitting machine to provide good fitting when the size called for is not in stock.

Munsingwear Plant Exclusively For SEAMLESS NYLONS

HIGHLIGHTS: *Opening of 392-machine mill marked by city-wide holiday in Rogers, Ark.— Million-dollar unit to produce 2,500,000 pairs annually.*

MUNSINGWEAR, INC., of Minneapolis, Minn., opened its Rogers, Ark., plant for the exclusive production of 400-needle seamless nylons amid fanfare that included ceremonies by the governor of the state, Ben Laney; a city-wide holiday; and a tour of the plant.

The installation, to house 392 Scott & Williams knitting machines, is said to represent an investment of a million dollars, $200,000 of which were for the building alone. About 150 employees will be used. Annual payroll was given as $350,000, and annual production two and a half million pairs.

John G. Archer, who has been associated with nylon hosiery production since 1938, when he started working with Fiber 66, was a special guest at the opening. Among other Munsingwear officials attending were: E. L. Olrich, president; E. C. Wilson and Clarence Tolg, vice presidents; John Detjen, industrial engineer; C. C. Humphrey, sales manager; and Ray Bacon, plant superintendent at Rogers. Beale J. Faucette, vice president of Scott & Williams, Laconia, N. H., also attended the ceremonies.

A section of Scott & Williams 400-needle machines in the Munsingwear plant. Operator is Lois Reddick.

Emma Nichols inspects 400-needle nylons in the gray on air-expanded form.

Some defective hose can be reclaimed by mending, but are classified as seconds or thirds. *Photos by Mustcen*

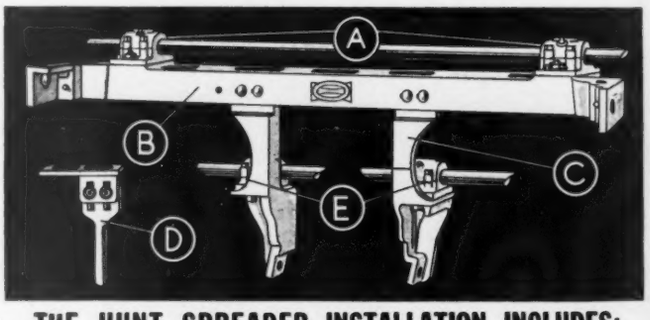
THE OLD TIMER CALLED IT "SUPER"

MAYBE I'm borrowing from my daughter, but "super" seems to be the word.

Ever since I started out as a loom man 34 years ago, I've had a notion that someday looms would be improved to where they wouldn't always be giving trouble. Now if I'm any judge, those new Hunt Spreaders solve the problem in a "super" way . . . really put some backbone into a loom.

Just today I visited a weave room where Hunt Spreaders have been put on a gang of old looms. Well sir, you've never seen old looms run so fast and so smooth. I asked their fixer what he thought of the Spreaders. He said they were a dream . . . simple and foolproof with no unessential nuts, bolts or parts to give trouble. He said he hadn't had a breakdown of bearings, loom-sides, crank shafts, camshafts or stop-motion brackets since the Spreaders had been put on, and that those looms were turning out more cloth with fewer "seconds" than ever before.

You can bet I'm seeing the boss tomorrow about Hunt Spreaders for our looms. I believe the idea of increasing production and lowering costs with Hunt Spreaders will sound "super" to him. And if you'd like to know more, I'd suggest you write the Hunt Spreader people today.



THE HUNT SPREADER INSTALLATION INCLUDES:

(A) Two extra crank shaft bearings which materially reduce destructive vibration in all parts of the loom. (B) Channel cast beam which braces the loom sides conjointly to form a rigid assembly at portion of loom where strain is most severe. (C) Vertical stands which tie the cam shaft and crank shaft together making improper meshing of gears impossible. (D) Improved, adjustable stop-motion supports which stay tight. (E) Sturdily built and easily oiled, these two extra cam shaft bearings eliminate "whip" set up by picking motion. Costs go down and profits go up when you install Hunt Spreaders.

Hunt SPREADERS

• ADD YEARS TO LOOM LIFE •

Hunt Equipment is Manufactured and Distributed by

MOUNTAIN CITY FOUNDRY & MACHINE CO., GREENVILLE, S. C.

ABSENTEEISM and TURNOVER

How North Star Controls Them

HIGHLIGHTS: *Since introduction of program, absenteeism has been reduced from a high of 8% to 2.2%—Unified program involves use of forms to check on absenteeism; similar program has reduced labor turnover.*

By RAY E. HIBBS,
Director of Industrial Relations, North Star Woolen Mill Co.

A part of North Star's program is to make working conditions as pleasant and as healthful as possible. This is illustrated by the well-lighted work room which goes far toward making employees' work more pleasant.

WE AT North Star Woolen Mill Co., Minneapolis, Minn., believe that absenteeism and a high labor turnover are companion problems and as such require similar methods of attack. We know, for instance, that when an employee is absent, either he *cannot* or he *will not* come to work; that when he severs employment, he does so, in general, either because he *cannot* or *will not* hold onto his job. The task, as we see it, is to find out which absences or job severances are involuntary and which are voluntary.

It is our belief that the greatest cause of absenteeism and turnover is poor employer-employee relations. We must therefore provide every condition which serves to avoid involuntary absences and job severances, and then try to sell each employee on coming to work and, if management wants to retain that particular worker, on holding onto his job.

The program of North Star to combat absenteeism and excessive turnover is not offered as the perfect or complete program because the program which will prove most effective will vary from plant to plant, depending upon conditions. This is an outline of a program which has done the job in our plant where conditions are certainly no more favorable than in the average mill.

ABSENTEE FIGURES AT NORTH STAR. The men in our plant average 39 years of age, women, 46 years. This group, on the basis of recent studies, seems to be particularly poor in attendance. What's more, over 54% of our employees are women, a group also supposedly bad in attendance.

The wage scale is average; hence, employees are not controlled through the incentive of high wages. Faced by these factors, and despite the fact that we count all absences, excused or not, we reduced absences from all causes from a peak of nearly 8% to 2.2% in the 14 months under analysis. We

DISCONTINUANCE NOTICE

Name..... Dept.....

Address..... Shift.....

Stopped Work at..... A. M. / P. M. Date.....

Quality of work, Good..... Fair..... Poor..... Would you rehire?.....

Reason for leaving, Voluntary..... Lay-off..... Discharge.....

Explain fully.....

.....

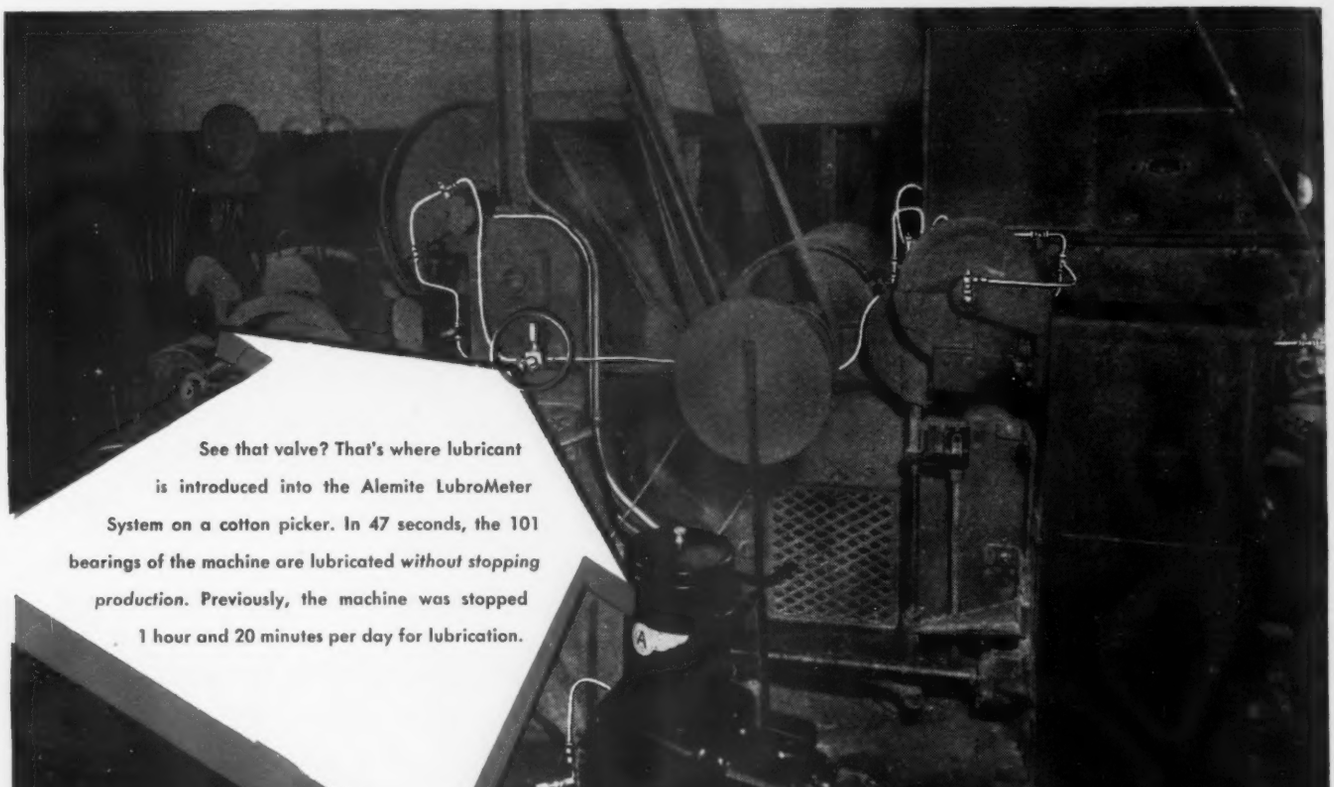
Signed.....
Foreman

Foreman—Prepare and hand to employee.
Employee—Deliver this to Personnel Office who will prepare Payroll Check authorization.

Fig. 1. When an employee wishes to leave the company or is discharged, the foreman must fill out the above form and have the employee present it to the personnel office, so that that office can check as to his reasons for leaving. This procedure has prevented rapid labor turnover.

HOW TO BOOST PRODUCTION AND CUT COSTS AT ONE SHOT WITH . . .

Alemite LubroMeter Centralized Lubrication Systems



See that valve? That's where lubricant is introduced into the Alemite LubroMeter System on a cotton picker. In 47 seconds, the 101 bearings of the machine are lubricated *without stopping production*. Previously, the machine was stopped 1 hour and 20 minutes per day for lubrication.

THE PIEDMONT MOP COMPANY, textile plant at Charlotte, N. C., operates the cotton picker shown above.

The 1 hour and 20 minutes more productive time gained each day results in 350 more pounds of picked cotton per day. In a five day week this would add up to 1750 pounds. In addition to greater production, operating costs are cut, too . . .

- because lubrication labor costs are practically eliminated.
- because bearing wear resulting from sand and cotton entering the oil holes is ended.
- because machines do not have to be periodically torn down to clean and replace worn bearings.

Thus increased production with lowered costs not only show up bright on the profit side, but the same two factors combine to pay for the LubroMeter installation in a short time.

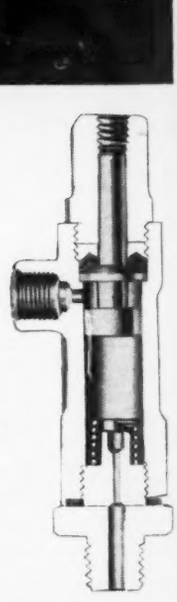
What Is the Alemite LubroMeter System?

It is a single line terminating system with the valves mounted directly in the bearings. It delivers a predetermined quantity of grease or oil to each bearing, assuring safe, positive lubrication. The System is extremely economical in initial cost, installation, and operation.

Have an Alemite Lubrication Specialist demonstrate the LubroMeter System, or the 3 other Alemite Systems, right at your desk with transparent working models. Call the Alemite Distributor nearest you, or write Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.

Alemite LubroMeter Feeder Valve

Fully hydraulic — Only 2 moving parts — Lubricant delivery easily adjustable —Valve is of heavy duty construction with hardened steel piston — Available in a variety of sizes and types. Each valve has indicator which signals the operator when bearings have been lubricated.



ALEMITE
REG. U.S. PAT. OFF.

Alemite ALONE Combines all 3 in Lubrication

1. EQUIPMENT 2. PROCEDURES 3. LUBRICANTS

Another Product of STEWART WARNER

did this chiefly by bettering our employer-employee relations. Our labor turnover, despite the fact that during the war period we were forced to hire many potential quits, has also been kept remarkably low.

ABSENTEEISM. Concerning the first problem, that of absenteeism, we had to know *who* was absent; *when* he was absent; and *why* he was absent. Our method of obtaining this information is comparatively simple and is covered in four steps.

1. The foreman notifies the personnel department weekly, through the means of an absentee report, the name of the person absent, the number of days absent, and the reason for the absence.

2. The personnel department will then list these absences on a form which permits the recording of a full year's absences.

3. After being posted with the record, the cards from the foremen are then sorted by department and the data accumulated for the summary of attendance and lost man-days for the week or month as desired.

4. At the end of each month, the cards from the foremen are sorted by employee and mailed to each with a letter stating, "These cards are being sent to you so that you may check them to be certain that they agree with your records"—it is self-evident that, for one reason or other, many workers may not want the fact of, or the reason for, their absences to become known to other members of the family.

DISCONTINUANCE NOTICE

EMPLOYEE NAME_____ DEPARTMENT_____

ADDRESS_____ CLOCK NO._____

STOPPED WORK AT_____ A. M. / P. M. DATE_____

REASONS FOR DISCONTINUANCE

VOLUNTARY			INVOLUNTARY		
√	CODE NO.	REASON	√	CODE NO.	REASON
	1	DISSATISFIED WITH JOB, SHIFT OR WORKING CONDITIONS			DISCHARGED
	2	DISSATISFIED WITH WAGES		16	INCOMPETENCE
	3	TO TAKE ANOTHER JOB		17	INADAPTABILITY
	4	WORK TOO DIFFICULT OR HAZARDOUS		18	WILLFUL VIOLATION OF RULES OR INSUBORDINATION
	5	FAILED TO REPORT FOR WORK OR RETURN FROM LEAVE		19	IRREGULAR ATTENDANCE
	6	POOR HEALTH		20	MISCELLANEOUS
	7	TO MOVE TO ANOTHER LOCALITY		21	
	8	RETURN TO SCHOOL			LAID OFF
	9	NEEDED AT HOME		22	LACK OF WORK
	10	MARRIED		23	CHANGE OF METHODS
	11	PREGNANCY		24	MISCELLANEOUS
	12	MILITARY SERVICE		25	
	13	NO REASON GIVEN	HAS BADGE BEEN TURNED IN? YES NO		
	14	MISCELLANEOUS	HAVE TOOLS BEEN TURNED IN? YES NO		
	15		DOES EMPLOYEE OWE COMPANY? YES NO		

PAYROLL DEPARTMENT:

PLEASE ISSUE CHECK FOR WAGES AND ANY OTHER CREDITS DUE THIS EMPLOYEE WHO IS BEING DISCONTINUED FOR THE REASON SHOWN ABOVE.

DISTRIBUTE COPIES:
ORIGINAL—PAYROLL DEPARTMENT
DUPLICATE—EMPLOYEE PERSONNEL FILE
TRIPLICATE—TIMEKEEPER
QUADRUPLICATE—SHOP STEWARD

SIGNED_____
PERSONNEL MANAGER

Fig. 2. After interviewing the employee and finding that it is impossible to keep him, the personnel office fills out this form so the employee can collect his back wages from the paymaster.

CONTROL OF ABSENTEEISM. In controlling absenteeism, we had a choice of two widely divergent methods of attack—a negative approach and a positive approach. We could either "discipline" employees who did not report for work after unexcused or unexplained absences, or we could try to build up attendance by selling employees on wanting to come to work instead of remaining at home. We choose the latter, the positive approach of bettering our employer-employee relations; and we think this choice was wise.

Involuntary absenteeism was controlled by removing, in so far as expedient, every condition that might give rise to situations which would make it impossible for an employee to report for work. Some of the essentials for the control of involuntary absenteeism may be listed as follows:

Illness, Injury, and Health

1. Entrance and periodic physical examinations for all employees.

(Continued on page 227)

Tom Ouger, a loom fixer, is being presented with a check in payment for a suggestion award. Herb C. Whitehouse, plant manager, is making the presentation while Otto Wick, weaveroom foreman, looks on.

SINCE PUBLICATION of "Absenteeism — Let's Solve It the Right Way," and "Labor Turnover—It Can Be Reduced by Sound Methods," two booklets written by the author of this article, the views expressed have gained nation-wide acceptance. Scores of firms, including the nation's largest shirt manufacturer and four farm-implement companies, have adopted the basic ideas of Mr. Hibbs. The War Manpower Commission, the War Production Board, Inspector of Naval Materials, and other government agencies gave these booklets wide circulation. Over 36 universities and colleges have used the booklets in their psychology, economics, and industrial relations courses. Requests for copies should be addressed to Ray E. Hibbs, Director of Industrial Relations, North Star Woolen Mill Co., Minneapolis, Minn. The essential principles covered in these booklets form the basis for this article—EDITOR.

There's a

SHELL TEXTILIS OIL

FOR EVERY TEXTILE MACHINE LUBRICATION PROBLEM

SHELL OIL COMPANY, Incorporated

50 West 50th St., New York 20, N. Y.

100 Bush St., San Francisco 6, Calif.

TEXTILE Equipment NEWS

New Features Revealed on F.N.F. Tricot Machine

A positive yarn delivery was among the F.N.F. warp-knitting machine features publicized for the first time at the showing in Cornwall, Canada, this month. Other features revealed were a flat spring-steel tension bar, a precision crankshaft, a new method of applying guide-bar pressure against the pattern wheel, a split pattern wheel, provisions for taking care of thermal expansion, and safety devices to prevent starting up or turning over the machine when the front bar is not in position.

The bolt-type needle used (commonly compared to a hypodermic needle) has an extremely small head; so small, in fact, that it permits knitting of up to 400-den. yarn (2 ends of 200 den., normally) on a 28-gage machine. [For sketch of needle see T. W. Feb., 1945, p. 121.] Needles are manufactured by F.N.F. and are said to be about the same price as latch. Friction between the bolt and its surrounding tube is taken care of by choice of metals for bolt and tube.

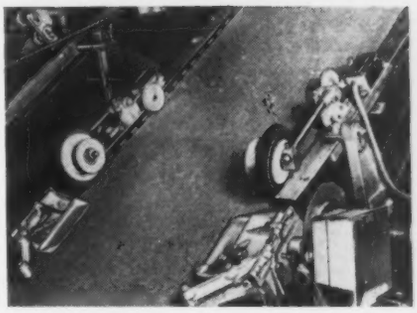
The operating speed of 1,000 courses a minute, it was revealed, is too great to permit the use of cams and of springs as in conventional machines. The F.N.F. machine differs greatly from the conventional tricot, and the machine shown in Canada this month has several features not on the original model. There are provisions for additional improvements or attachments which are planned for later models and which perhaps might be adapted to the current machine.

The F.N.F. machine will be shown next month in the United States, probably at Marcus Hook. Aveco, Inc., (producer of the Aveco tricot machine) is the U. S. agent.

Electronic Controls Guide Tenter-Pin Belts

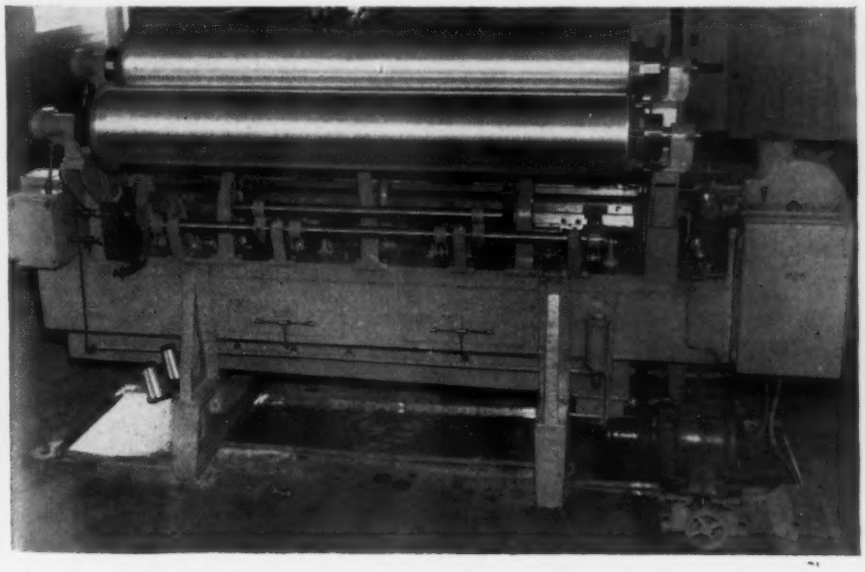
To guide the pin belts of tenter frames, an electronic-control system has been developed by Airedale Electrical and Manufacturing Co., Ltd., Bradford, England. It consists of two photoelectric-cell units, one on each side of the frame.

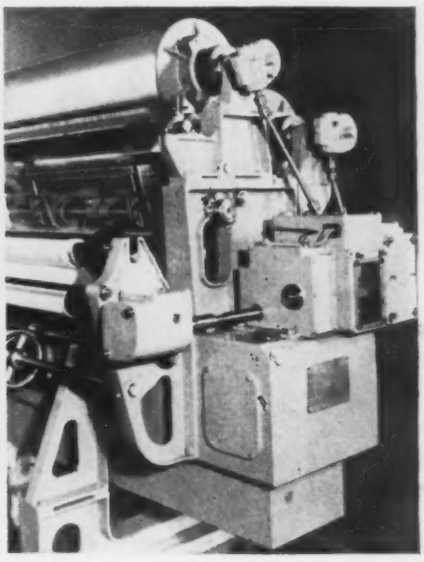
A light source immediately above and in line with each selvage shines past the selvage and through a glazed aperture below the fabric, where it is split into two beams by a vertical central barrier. Each beam is carried to a photoelectric cell by a mirror inclined at 45°. The two cells are connected in a back-to-back circuit to an amplifier, with a relay in each plate circuit so arranged as to operate the clutch coils of the guider motor.



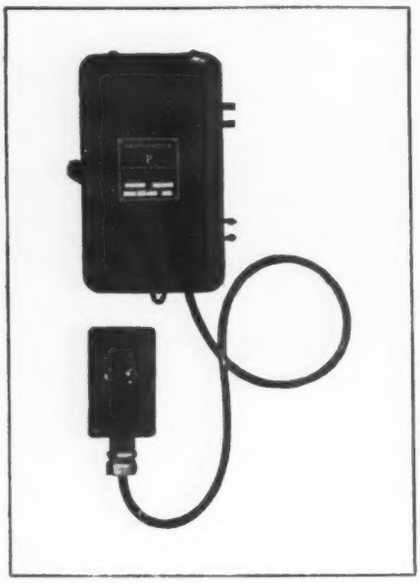
Electronic guide control in operation on pin tenter. (Airedale)

When cloth width is correct, the outside cell is illuminated and the inside one is blacked out, but the circuits are so arranged that under this condition both relays are de-energized. The device operates only when the selvage moves out and blacks out the outside cell, or when it moves in and allows light to reach the inside cell.





Production model of the tricot machine built by F.N.F., Ltd., Burton-on-T ent, England, to be sold in the U. S. by Aveco, Inc. Photo at right shows radically new variable-speed beam-drive arrangement which is controlled by the two disks seen above the bobbins of yarn in the main photo.



Photoelectric control is designed to operate in 1/20 sec. (Photoswitch)

Photoelectric Control Is Impervious to Moisture

Designed for general industrial and machinery applications, Series 20 and 21 photoelectric controls have been announced by Photoswitch, Inc., Cambridge 42, Mass. They are recommended for such applications as conveyor control, short-range signal systems, motor or valve control, machinery safe-guards, stop-motion control, as well as automatic control for many specialized industrial processes.

The phototube is available either integral with the housing or in a small separate housing. A single set of terminal board connections in the control provide the supply current for the light source, which requires only low-voltage wiring. The control is said to be impervious to moisture, and designed to give unlimited life under conditions of extremely high temperature and humidity. Hermetically-sealed, oil-filled condensers and high-wattage resisters are used throughout. Designed for high-speed operation, the relay is said to operate in 1/20th of a second at an operating range of 20 ft. A sensitivity adjustment is designed to provide for relay operation at any predetermined level of illumination within the range of 10 to 50 foot candles.

E-Model Loom Speed Increased by New Braces

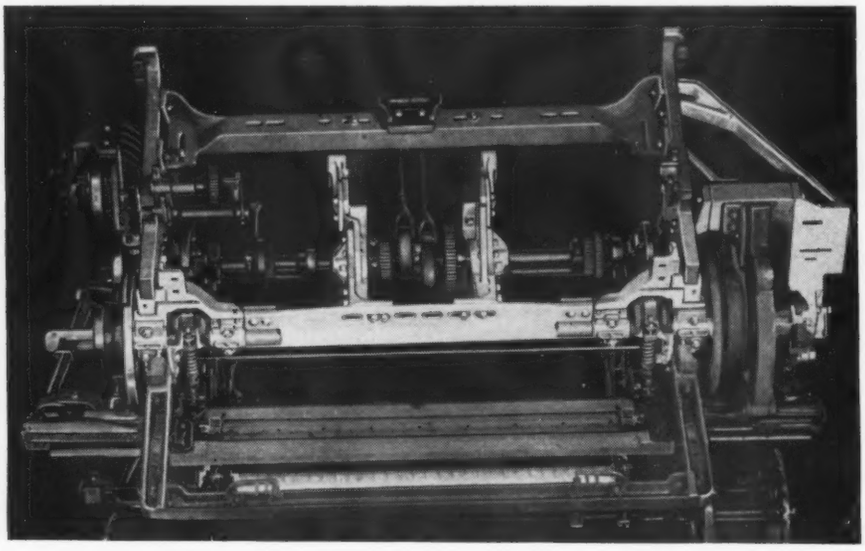
Equipment to enable mills to speed up their E-Model looms has been introduced by Draper Corp., Hopedale, Mass. The "top-girt" construction, a product of Draper's research department at East Spartanburg, S. C., has several features which experience has indicated are essential to the development of higher speed on older types of looms, it is said.

The top girt is made in three sections and is said to be easily applied. The weight of the girt is carried by means of a shelf which extends over the top of the loomside, in order to eliminate use of dowel pins and prevent the girt from moving out of place. Floor supports are also provided to give additional strength and reduce vibration.

The girt ends are designed with large bearing surfaces to provide the necessary additional strength for the loomside. They are machined for easy and accurate fitting.

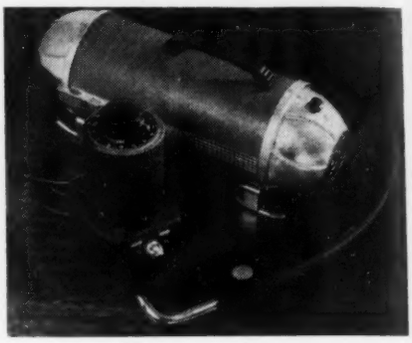
Strengthened crank-shaft boxes cannot get out of line, it is said. Adjustable cam-shaft boxes reportedly allow for proper meshing of the cam- and crank-shaft gears without vertical fitting.

This construction affords ample harness and warp-beam space and also allows the use of spring-type crank arms.



Top-girt construction, applied to E-Model looms, allows higher speeds. (Draper)

Vacuum Unit Removes Abradings from Tester



An accessory for use in abrasion-resistance testers, announced by Taber Instrument Corp., North Tonawanda, N. Y., is designed to assure continuous maintenance of uniformly effective contact of abrading wheels against the sample, making possible more accurate results. This it does by rapidly and thoroughly removing lint and abradings from tested samples, it is stated. Available in 115-volt or 230-volt models, the device utilizes a 2-stage turbine vacuum unit. (Taber)

Process Controller Has Reset Range 500 to 1

A new controller, designated Model 40 and recommended for control of temperature, pressure, flow, and other variables, has been announced by The Foxboro Co., Foxboro, Mass. Features of the new instrument are said to include simplification of design, sturdy unit construction, easier and more flexible adjustments, and easy servicing, replacement, or interchange of unit parts. When the case door is open, all dials, adjustment knobs, and other parts normally requiring attention are immediately accessible, it is stated.

Proportional band is settable from 0 to 20%. Range of reset is 500 to 1, but reset and derivative functions can be easily eliminated, when desired. A new type transfer switch is said to enable the operator to change from automatic to manual control, or vice versa, with ease and rapidity.

Made as an indicator as well as a single- or multi-pen recorder, the

SONOCO TUBES

ALL SIZES ALL TYPES ALL USES

SONOCO makes Paper Tubes for any and every conceivable use.

Complete technical facilities for designing and producing paper tubes to meet any requirement are an integral part of SONOCO Service.

Shown herewith are a tube for narrow fabrics, a split tube with embossed surface for multiple wound insulating yarns, a velvet surface tube for fine count yarns and a standard Kraft smooth surface tube for novelty yarns, broom twine, polished twine, and wrapping twine.

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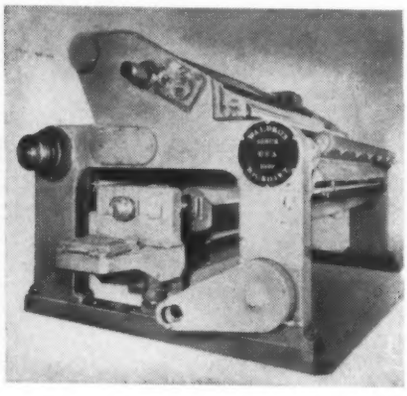
When case door of Model 40 controller is open, every dial, knob, and other part normally requiring attention is easily accessible. (Foxboro)

Model 40 is available for on-off control, proportional, proportional and reset, proportional with derivative, and proportional and reset with derivative.

Coating Machine Replaces Assembled Pieces

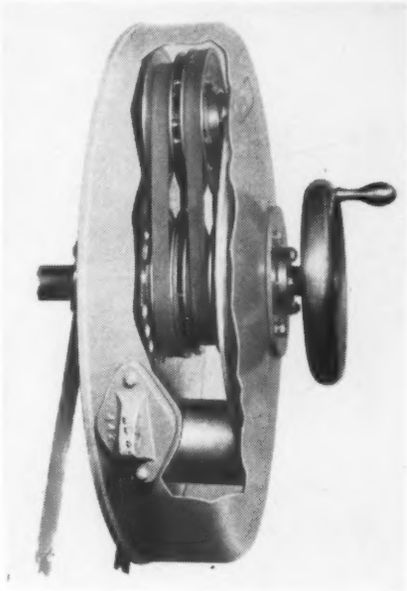
The "Microjet" coater, recently developed by John Waldron Corp., New Brunswick, N. J., is said to be the first completely coordinated machine to replace the groups of individual pieces of equipment heretofore assembled for coating fabrics. The coating is applied in excess amount though the medium of a roll. The Microjet coating head, which is an air blade fitted with a slot, is designed to plane off the coating not needed, leaving the coating on the surface uniformly distributed and free of marks or scratches. No roll, doctor, or brush touches the surface after the coated web passes in front of the "Microjet" air blade, it is stated.

The equipment includes a flying-splice unroll stand, the Microjet coater with air compressor and tension-control attachment, a straight-pass conveyor-type air dryer, a tension-control unit, and an automatic winder. The machinery is said to be heavily constructed and to be fitted with a variable-voltage drive and a loop-control device, as well as moisture-regulating and recording instruments. All drives are enclosed.



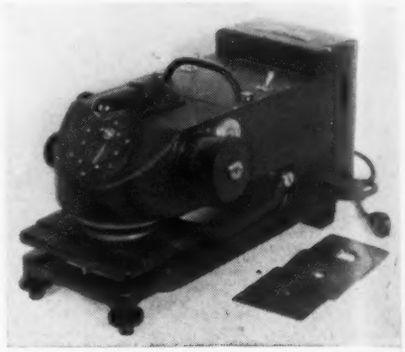
One-process coating machine uses air blade to remove excess coating material. (Waldron)

V-Belt Transmission Gives Stepless Speed 0-400



A new development of planetary motion in which two standard cross-section V-belts and four variable-pitch pulleys provide infinite-ratio, stepless speed from 400 r.p.m. through zero and into full reverse at constant torque of 2-hp. capacity has been jointly announced by Speed Selector, Inc., Cleveland, and The B. F. Goodrich Co., Akron, Ohio. The complete speed range is said to be covered by 4½ turns of the control wheel, with remote controls available. (Speed Selector)

Device Measures Air Permeability



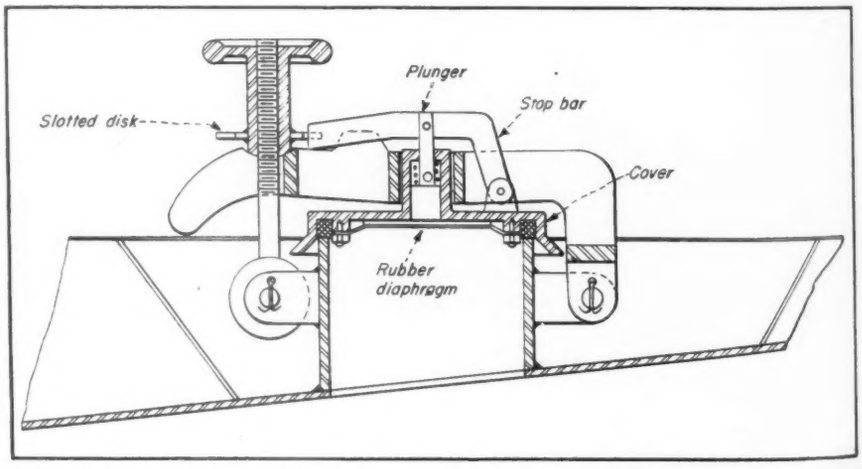
Permeometer, announced by W. & L. E. Gurley, Troy, N. Y., is said to be capable of measuring the air permeability of all fabrics up to 5/16 in. thick which will pass 1 to 400 cfm. of air per sq. ft. at a pressure drop of 0.5 in. of water. Said to require no special skill to use, the device weighs only 15 lb. and operates on 115 volts, a.c. or d.c. Using the device, tests can be made in not more than 15 sec., it is stated. (Gurley)

Dye Kettle Improvements Aid Safety, Performance

Two new improvements to be included as standard equipment on all Fleet Line stock-dyeing kettles have been announced by Riggs & Lombard, Inc., Lowell, Mass.

A new safety feature is said to eliminate dangers due to opening of sampling cover while the machine is under pressure. It consists of a rubber diaphragm, inserted just under the sampling cover, which is expanded upward by pressure in the kettle. When expanded, it raises a plunger which, in

(Continued on page 244)



Rubber diaphragm operates plunger and stop bar to lock handwheel when kettle is under pressure. (Riggs & Lombard)

SOCRATES HAD A SALES-WISE SAYING

"Guard Well Your Precious Name"

To this sage saying of Socrates add the phrase "with Kaumagraph Identification" and you have a ready made maxim, sound, sales-wise and particularly pertinent to the protection and survival of your product. And practical too, for with Kaumagraph Dry Transfers and Prestomarks your name, trademark or lettering can be quickly, legibly marked on any textile, leather, rubber or synthetic material with attention-compelling distinction . . . instantly recognized identification that protects and projects your product across the vital gap between it and the ultimate consumer. Whether for style, construction and size on your finished product, added eye appeal for your package and display or control numbers and symbols on the back and selvage of goods in manufacture, Kaumagraph reproduces every essential identification from mill to merchant to consumer with outstanding fidelity and economy. With KDT's all that is required is the application of a hot iron or the heat incidental to some processing operations. For safe, sure protection of your product . . . for the selling stimulus of quality recognition "Guard well your precious name 'with Kaumagraph Identification'." Send for a Kaumagraph Man today.

KAUMAGRAPH COMPANY

Identification Headquarters since 1902

KAUMAGRAPH COMPANY • WILMINGTON 99, DELAWARE • EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • REPRESENTATIVES IN PRINCIPAL TEXTILE CENTERS OF THE WORLD.

Dry Transfers *Prestomark Labels* *Embossed Seals* *Transfer Irons* *Stamping Inks*

Lithography for Box Wraps, Labels, Displays, Booklets, and Folders

Dyes & Chemicals — PRODUCTS & PROCESSES

Printing Thickener Resists Oils, Alkalis

ETHULOSE; George G. Johnston Co., 865 First Ave., New York 17.

A new thickener for use in textile printing has been announced by George G. Johnston Co. The material, Ethulose, is said to form clear, smooth aqueous solutions when stirred in at temperatures of 20° C. or below. Three viscosity ranges are available (2% aqueous solution): 25 to 60, 100 to 200, and 500 to 1,000 centipoises. Most non-volatile alcohols may be used as plasticizers for Ethulose, it is reported; in the unplasticized state, films of the material are said to be very flexible even when fillers are present, and to be insensitive to most of the common solvents and oils.

Properties reported are: chemically neutral, non-fermenting, non-toxic, odorless, tasteless, resistant to frost or heat.

Brown Pigment Is Light-Resistant

AURIC BROWN; E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

Brighter, cleaner, and more durable shades of brown are said to be obtainable, using a newly developed pigment announced by Du Pont. Auric Brown, which is chemically hydrated ferric oxide and is characterized by extremely small particle size, is also reported to be resistant to alkali.

Ceglin-Latex for Pile Fabric Backing

A new method of back-filling pile fabrics, said to render such fabrics more resistant to aging and laundering, has been announced by Sylvania Industrial Corp., New York 17. The method utilizes Ceglin cellulose ethers and rubber latex, which are cojointly coagulated upon the fabric and are said to secure the pile yarns against withdrawal. It is reported that various pigments and fillers may be added to the mixture before or during application to the fabric.

Mercerizing Assistant Eliminates Boil

DYPENOL SED; Dexter Chemical Corp., New York.

A new mercerizing assistant, Dypenol SED, announced by Dexter Chemical Corp., is said to permit higher mercerizing speeds, and by addition directly to the caustic to eliminate preliminary boil-off. It does not lose its power through exhaustion onto the goods or on standing in the caustic, and it prevents foaming in recovery of the caustic, it is reported.

Mill Maintenance

Grooving Helps Bond When Spraying Metal

One of the chief advantages derived from the use of a metal spray in building up worn parts is the fact that lubricants are held in the pores of the repaired surface and given off when the part is in operation, according to information released by The International Nickel Co., Inc.

In building up a machine part by metal spraying, it is essential to secure a good bond between the part and the sprayed metal. Because the sprayed particles of metal cool so quickly, the surface of the machine part should be grooved to provide an anchor for the sprayed metal.

To prepare the surface properly, dry machine the part to the desired depth, cut a thread of about 24 grooves per inch around the part, and dovetail the ridges between the grooves. Do not handle the prepared surface, and do not allow it to stand long before applying the spray, since any foreign matter —oil, dust, etc.—will weaken the bond between the base metal and the sprayed metal.

Make a few passes with the spray gun held at an angle, so that metal is deposited in the dovetail grooves. Mount the gun in the holder with the nozzle 6 in. from the machine part, and apply the rest of the metal.

Finish the built-up section by grinding or machining.

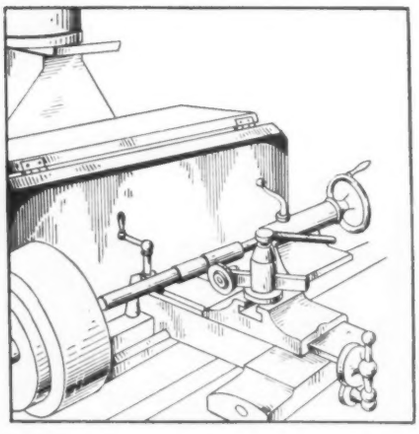


Fig. 1. After the grooves have been cut in the machine part, dovetail the ridges between the grooves.

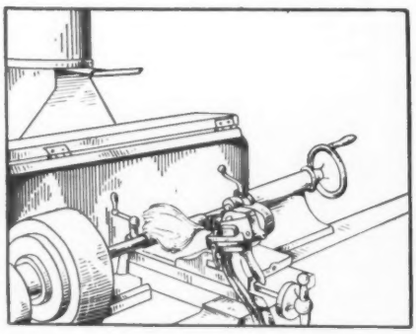


Fig. 2. Make a few passes across the grooved section with the gun held at an angle; then mount the gun in the holder.

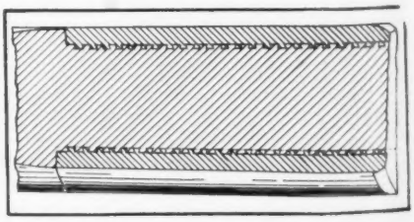


Fig. 3. This cutaway view shows the base metal and the sprayed metal anchored to each other by the dovetails.

"5% MORE PRODUCTION in Carding"

"50% FEWER ENDS DOWN in Spinning"

"50% LESS RESIDUAL OIL after Scouring"

Fybrol 1115

The ORIGINAL Water-Soluble, Self-Scouring Wool Oil

*PATENTS PENDING

FYBROL 1115—introduced only a year ago—is now standard in mill after mill. Such a lubricant was needed—self-scouring, water-soluble, non-gumming, uniformly penetrating—Fybrol 1115 meets all requirements. All along the line, FYBROL 1115's better coverage improves mill efficiency. For example: At least 50% less residual oil after scouring—in most cases soap is entirely eliminated. Increased card production—at least 5%. Improved spinning—50% fewer ends down. Results: Better fabric . . . better handle . . . better dyeing and finishing.

FYBROL 1115 is easier to use and more economical than conventional wool and worsted oils . . . practically foolproof . . . proved by experience in mill after mill, on all types of blends.

Try, then standardize on FYBROL 1115 . . . unexcelled for its wetting and detergent properties. Send for latest performance data and trial order.

NOTE—FYBROL 1115 performance results quoted above are from actual mill experience and in individual cases may vary to a greater or lesser degree depending on conditions.

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Dept. W9, 88 Lexington Ave., New York 16, N. Y.

We are interested in FYBROL 1115 for processing Wool . . . Worsted . . . Please send us latest mill performance data on FYBROL 1115 . . . Ship us . . . 54-gal. drum(s) of FYBROL 1115 at current price.

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Kinks AND SHORT-CUTS

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Savings Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **SAVINGS BOND PRIZE FOR SEPTEMBER**

(July Contest)

Full-Bobbin Holder Speeds Non-Automatic Spooling

Many weaving mills do not have high-speed, automatic spoolers and winders; and the cost of winding is expensive. Forty to fifty spindles, or less, are serviced by one operator, the number depending upon the size of the spinning bobbin, the size of the take-up package, and the speed of the machine.

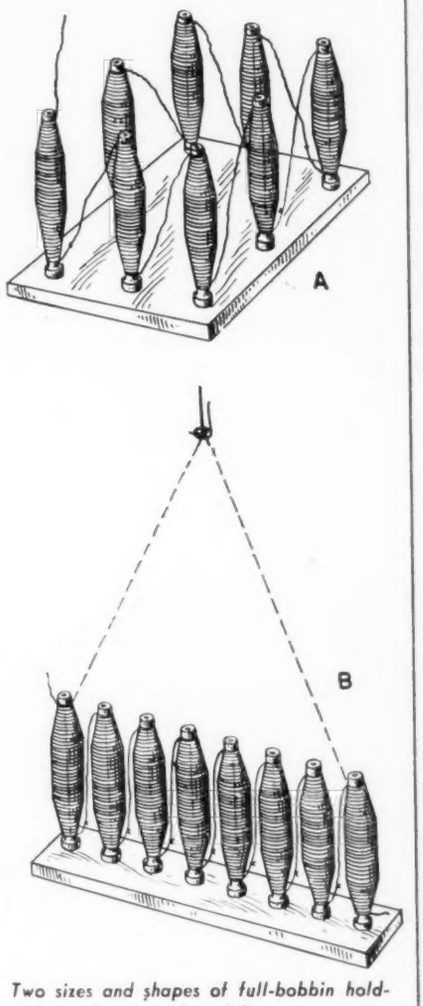
The work of the operator consists of the following operations:

1. Taking off the empty spinning bobbin
2. Setting the full bobbin into the machine
3. Tying the yarn ends
4. Setting up and taking off the cone.

It is possible to effect considerable savings if operations 1, 2, and 3 are performed away from the machine. Full-bobbin holders, similar to the ones shown in the accompanying sketch, make this procedure possible. One holder consists of a small board 10 to 15 in. square, with eight or nine spindles arranged in rows upon which the bobbins are placed. Instead of using a square board, it is also possible—and sometimes more practicable—to use a rectangular board 2½ in. wide and 10 to 15 in. long, so that the bobbins are held in a single row.

The spinning department should be careful to leave a tail of 4 to 5 in. in length on each bobbin. The inside end, or tail, on one bobbin has to be tied to the outside end of the bobbin next to it on the bobbin holder, so that all eight or nine bobbins are tied together to form a continuous length of yarn.

Place the board containing the bobbins on the machine at the same spot where previously only one bobbin was placed. Instead of the operator having to replenish the yarn supply when one bobbin is run off, she will have to replenish it only when all the bobbins on the board are emptied.

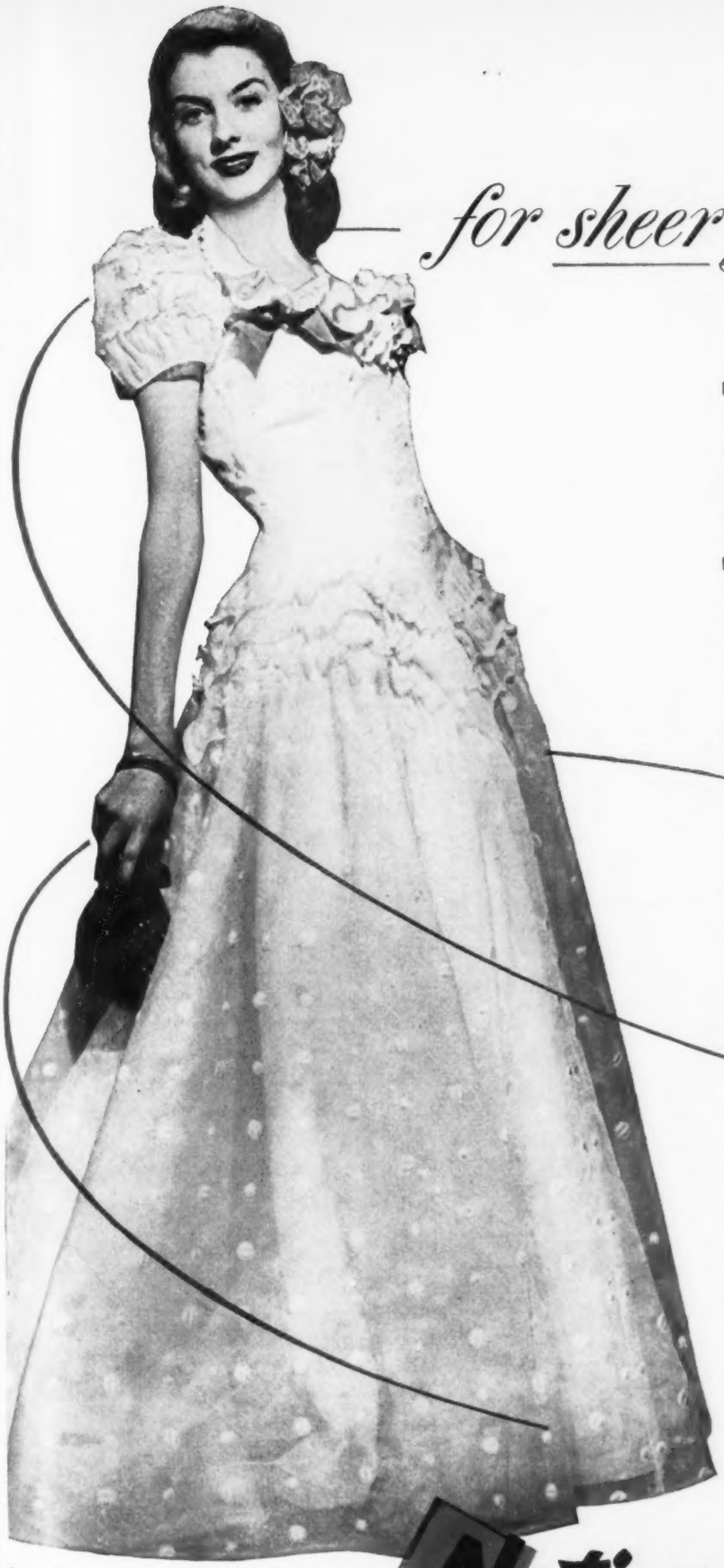


Two sizes and shapes of full-bobbin holders are shown at A and B.

The size and shape of board selected must depend upon the free space available on the winding machine and also on the distance between the board and the thread guide. If the thread enters the guide at too steep an angle it will break too easily. *(546) Paul Geiringer, Newtonville, Mass.*

(KINKS & SHORT-CUTS—*Continued on page 166*)

Fibertex
FOR FINISHING



— for sheer glamour

FIBERTEX is a thin cooking, oxidized starch derivative with uniform penetrating qualities. It is clear, colorless, non-jelling. It yields crisp, transparent finishes that are relatively unaffected by humidity changes.

FIBERTEX is an excellent, economical replacement for gelatin, gum arabic and resin finishes. It eliminates the "tailing off" of shades when dyeing and finishing are performed in a single operation. It does not reduce or bleach dyestuffs.

FIBERTEX is especially recommended for finishing cotton organdies, lawns, dimities, handkerchief fabrics, etc. It is used extensively for finishing dress goods, interlinings, nettings, veilings, elastic webbings, knit goods, etc. It also produces excellent finishes on rayon crepes, voiles, sheers and all types of spun rayon blends. Write for complete information—NOW!

National also produces: **AMBERTEX,** a heavy-bodied thickener for white discharge, direct and vat color printing; **VAT GUM 36** for vat colors on cotton and rayon; **ALG GUM** for Rapidogen or Pharmasol, Indigosol or Algosols and Napthol colors; **AMYLON,** a cook-up type, to replace natural gums as a printing thickener; **FABRIC ADHESIVE 584** to keep patterns in register and speed production; **TABLE ADHESIVE** for screen printing.

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COTTON-TEXTILE INSTITUTE

National
STARCH PRODUCTS

STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

KINKS & SHORT-CUTS
(Continued from page 164)

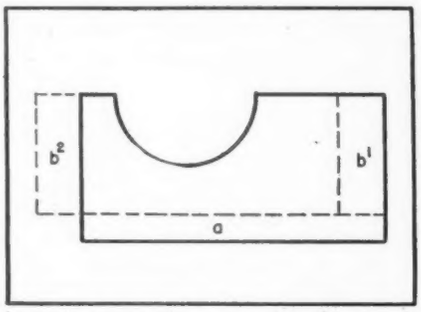
Old Stop-Motion Magnet Used as Filling Stop Motion

Mills using an electrical feeler to stop the loom or to indicate when the filling is depleted must have a stop-motion magnet or solenoid with some device to hold the knock-off arm up, once the circuit is closed, until the current is cut off by the loom-handle switch. All the newer-type stop motions are equipped with either an electrical shunt or a mechanical pawl to hold the indication.

If a mill has some of the old-type magnets and cannot secure new ones with a shunt device, the magnets may be converted for use until the newer-type motions are available. There are a number of different ways to convert these magnets, but the principle is the same for all of them. A contact must be made when the armature is raised which will hold the indication until the feeler indicates or the loom stops.

The magnet shown in the accompanying sketch is converted for this purpose by fastening a piece of fiber at the top and connecting a brass spring to the fiber so that the spring will make a contact when the armature is raised.

This conversion is also useful on the old-style warp stop motions not equipped with a shunt, as the loom will stop if the drop wire makes only a brief contact. (K-423)



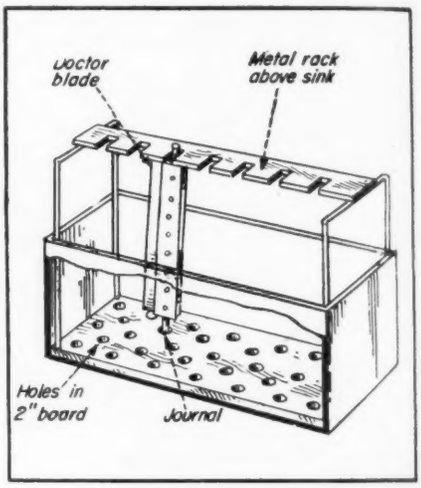
Wasted oil at the square troughs on our winders was reduced by changing the wooden bearings as shown here. The solid lines represent the original shape of one of the bearings ,and the dotted lines indicate the changes made.

Waste of Oil at Winder Reduced by Bearing

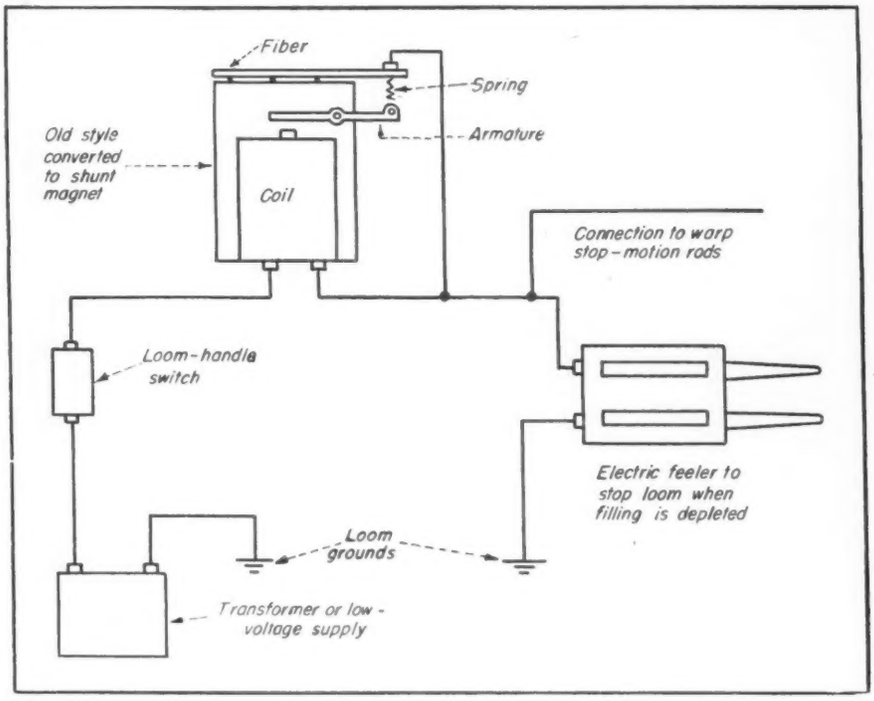
The stainless-steel oil troughs (square troughs) on our winders gave us a considerable amount of trouble because the oil rolls set too high and too close to the front of the troughs. Overflowing of oil resulted from the the carelessness of our oilers in not watching the oil level when adding new oil to the trough. The loss of oil was aided, however, by waste catching between the oil roll and the top edge of the trough. The waste acted as a carrier for the oil over the edge and down the front side of the trough.

In solving the problem of wasted oil, we removed the wooden bearings upon which the oil roll revolves. We cut $\frac{1}{8}$ in. off the bottom of the bearing, as shown at a in the accompany-sketch, and $\frac{1}{4}$ in. off the back of the bearing, as shown at b^1. The $\frac{1}{4}$-in. piece was placed in front of the bearing, as shown at b^2.

The results of these changes were to lower the bearing, and consequently the oil roll, $\frac{1}{8}$ in. and to move the roll back $\frac{1}{4}$ in. more from the front of the trough. Now we have a greater depth of oil in contact with the roll, and the oilers do not need to keep the oil level so high in the trough. We also do not have waste catching between the oil roll and the top of the trough. (K-542)



The 2-in., perforated board on the bottom of the sink prevents the doctor-blade journal from slipping while the blade is being washed.



When the armature makes connection with the springs, the indication will be held until the feeler indicates or the loom stops.

Washing Doctor Blade Made Safe by Board

Washing doctor blades results in perhaps more accidents than any other task connected with textile printing. Several methods of washing the blades are used, but most of them involve propping the blade on end in a tub or sink and washing off the color with a rag, brush, waste, etc. Quite often the bottom of the tub is covered with a deposit of starch or gum used in thickening dyestuffs, and this deposit makes the bottom of the tub a slippery, insecure resting place for the journal of the doctor-blade holder. If the journal slips, the operator washing the blade usually receives a cut from the blade.

In one plant this accident hazard

CEGLIN* *Finish for Textiles*

INCREASES TENSILE STRENGTH...

CEGLIN finished fabrics are stronger fabrics because CEGLIN reinforces each thread. It is so firmly anchored to each fiber that it is fast even to kier boiling. CEGLIN stabilizes shrinkage and stretching...increases resistance to slippage, distortion and abrasion. CEGLIN can be applied before boil off...during mercerization . . . before or after dyeing...or as a final finish. It does not require curing nor ageing at high temperatures.

For additional information write for technical booklet giving complete directions on uses and application of Ceglin.

How CEGLIN *Increases the Intrinsic Value of Fabrics*

- PROVIDES A FINISH OF DISTINGUISHED CHARACTER.
- Stands up under laundering.
- Adds tensile strength.
- Stabilizes shrinkage and stretching.
- Increases resistance to slippage or distortion.
- **MAKES POSSIBLE A WIDE RANGE FROM SOFTNESS TO CRISPNESS.**
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***Made only by* SYLVANIA INDUSTRIAL Corporation**

Manufacturers of cellophane and other cellulose products since 1929

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SYLVANIA TEXTILE FINISHES

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KINKS & SHORT-CUTS

(Continued from page 166)

was eliminated by covering the bottom of the sink with a 2-in. board in which numerous holes, slightly larger than the journal of the doctor-blade holder, had been cut. The operator washing a blade fits the journal into one of these holes and leans the other end of the blade against a slotted metal rack above the sink. This precaution keeps the blade from slipping. *(K-547) L. H. Ferguson, Charleston, S. C.*

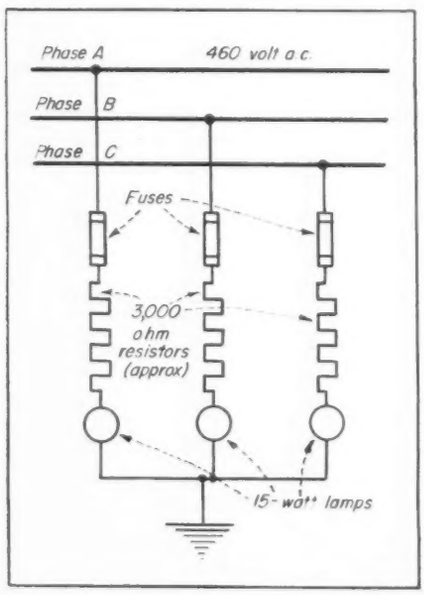
Secondary Distribution Needs Ground Detector

Transmission of power used in a plant can be accomplished more economically at voltage of 440 or 460 than at the once-common 220 a.c. or 230 d.c. At these higher voltages, a worthwhile saving of copper, conduit, and fittings is made in performing the same work formerly done at the lower voltages. This saving is especially noticeable when the new metal-clad unit substations can be placed near load centers.

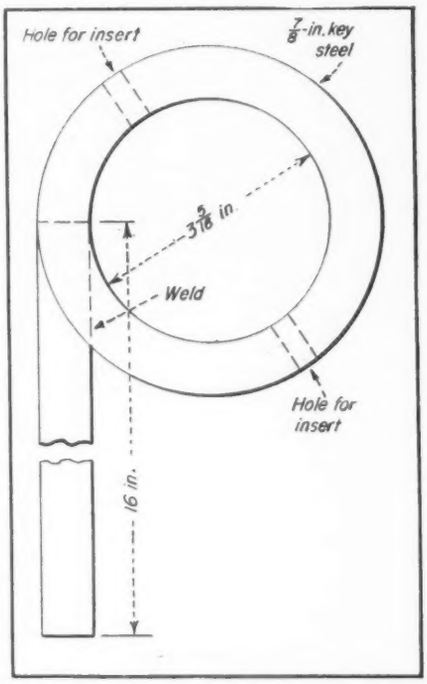
In plants today, many are operating with their secondary electrical systems free of ground contact. By this means, the chances of an electrical shock to personnel is reduced. To maintain the 440-volt ungrounded system free of grounds at all times requires frequent checking or a permanent ground detecting device, such as the one shown in the accompanying sketch.

This unit is economical both in current consumption and in first cost. It should be installed in a convenient place, so that an accidental ground is immediately made known before a second ground, and consequently a short circuit, occurs.

For neatness, the fuses and resistors should be installed in a compact metal cabinet. If a switch-board installation is desired, the same units may be installed on the back of the board with only the lamp sockets mounted on the front. *(K-524) Paul C. Ziemke, Oak Ridge, Tenn.*



When a ground or short circuit occurs, one lamp goes out and indicates the grounded phase.



This comb-box spanner wrench, made in a mill shop, has given satisfactory service.

Card Comb-Box Wrench Has Substantial Inserts

The comb-box eccentric-shaft bearings on Saco-Pettee and Saco-Lowell cards serve also as nuts. The bearings are rather hard to tighten, and a substantial spanner wrench must be used in order to prevent damage being done to them as they are tightened.

During the war we experienced considerable difficulty in obtaining spanner wrenches for this purpose, and those we did obtain were not very satisfactory. After using them a few times, the inserts which fitted into the holes in the bearing would break off; and the tool had to be discarded.

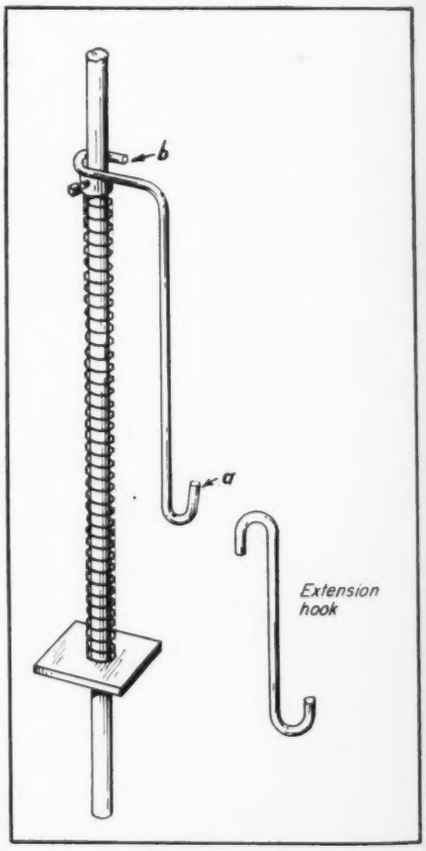
We made a substantial wrench which has given satisfactory service. A piece of $\frac{7}{8}$-in. key steel was formed into a circle with an inside diameter of 3 5/16 in. On each side of the circle a hole for receiving inserts was bored. These holes were of such a size that inserts which fitted the holes in the bearings could be pressed into the holes in the tool circle and be held securely by them. The inserts were also made of key steel.

To one side of the circle, a 16-in. length of the $\frac{7}{8}$-in. steel was welded for use as a handle. *(K-552)*

Spring Compressor Hook Aids Woolen Loomfixer

On the older woolen and worsted looms there is a vertical rod or plunger which connects the brake lever to a lock on the breast beam. On this rod there are mounted a spring and collar which give the brake its power. This spring must be compressed in its tightest position and locked there with the collar and setscrew.

When putting on a new rod or when the collar becomes loose, some tool or lever must be used to compress the spring. Some fixers use a picker stick or long screwdriver, but such levers have a tendency to slip from the points of pressure. They also have



A piece of rope, leather, chain, etc., can be used as an extension to replace the extension hook.

BACK TO NORMAL

Our experienced, well trained former employees are rapidly returning from their war duties, determined to increase production of our

STE-HED-CO Products

We are also in better position to supply

STAINLESS STEEL HEDDLES

which have become almost indispensable for the manufacturing of acetate fabrics.

Our Engineering Staff has been busy inventing, designing, and perfecting new improvements to help you meet present day demands.

Consult with our Local Field Engineer.

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Woonsocket, R. I.

KINKS & SHORT-CUTS

(Continued from page 168)

a tendency to change the position of the part used as a fulcrum.

A better tool, shown in the accompanying sketch, can be made by using a 6-in. length of ¼-in. rod. Bend a straight hook, *a*, in one end of the rod and an offset hook, *b*, in the other end of the rod. If needed, an extension hook can be made for coupling with a.

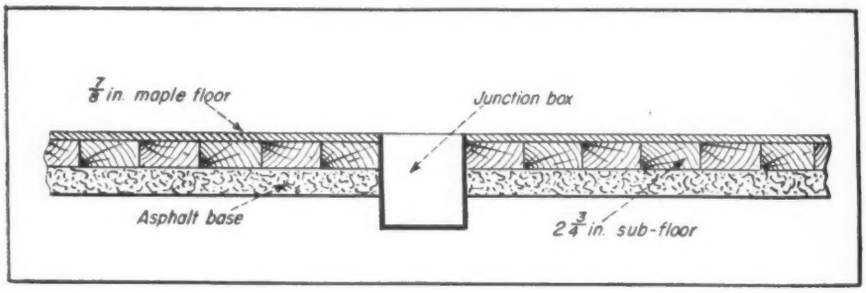
To use the tool, place hook *b* over the brake-lever connecting rod and lower the hook until it rests on the collar which serves as a stop for the spring. Place a screwdriver, wrench, or other tool in hook *a*. Loosen the setscrew in the collar, pull down on hook *a* until the spring is sufficiently taut, and tighten the setscrew. Remove hook *b* from over the rod.

I have also put this tool to good use in compressing the vibrator spring on the Bartlet let-off. *(K-544) Chas. S. Bicksler, Lancaster, Pa.*

Holes in Mill Floor Patched With Concrete

Some time ago we had a weave room, containing 950 motor-driven looms, which we wished to change over from weaving to other purposes. The wiring for the motors was beneath the floor, and there was a junction box for each loom. When the looms were moved and the wiring and junction boxes taken up, we had a floor with 950 holes the size of a junction box in it.

Before the new machinery was installed, the holes in the floor had to be patched. After some consideration, we decided to fill the holes with concrete instead of cutting in wooden patches. The job was done at approximately one-twentieth the cost of patching with wood. *(K-538) Richard Dilworth, Pawtucket, R. I.*

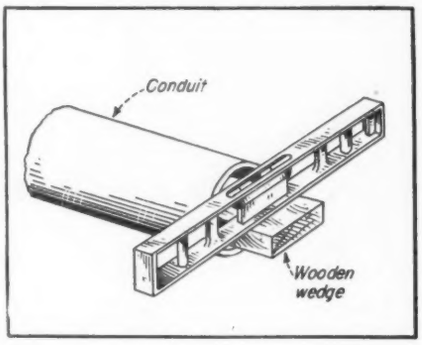


After patching the floor with concrete, we installed the new machinery; and the patches were soon forgotten.

Broken Harness Jacks Decreased by Using Wire

In order to lessen the number of broken harness jacks on our C & K looms, we twist a piece of strong wire around the wires which connect the jacks to the back lower harness straps to help hold the wire in place when a harness strap breaks. Thus, by preventing a loose wire from becoming entangled with the jacks as they are in motion, we save many broken jacks and, consequently, many pick-outs by the weavers.

One end of the wire is bent so that it encircles all the harness wires, and the other end extends downward and is fastened to a convenient bolt in the loom side beneath the head. *(K-445)*



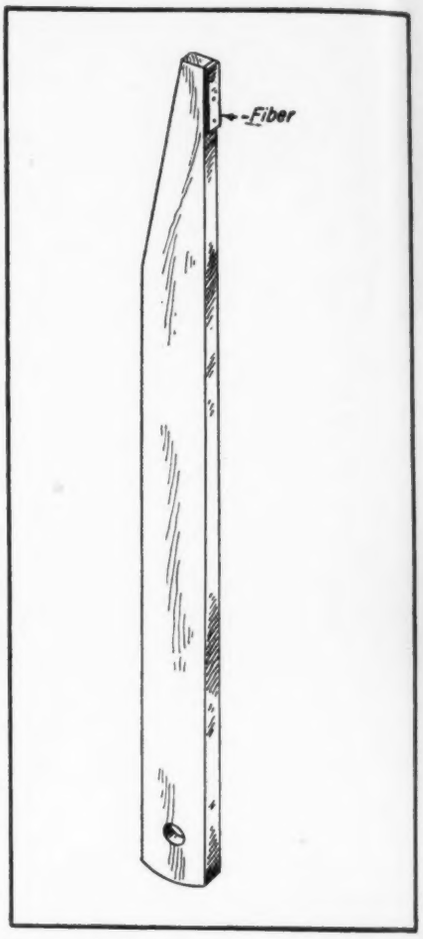
Wedge and hand level to keep conduit level when bending, help eliminate distortion.

Offsets in Conduit Gaged With Bead Level

Bending large-size conduits requires the use of a mechanical bender, especially the big jobs where many lengths of conduit must be furnished for both power and lighting installations. When these lengths are placed in parallel positions, any slight deviation in their shapes will be noticeable. To avoid having such defects in a conduit layout, keep the conduit level during the bending operation.

To keep the conduit level, drive a small section of scrap lumber into the end of the conduit, allowing about 4 in. of the end of the stick to protrude from the conduit. This length of stick is used to hold a small hand level, as indicated in the accompanying sketch. When the first set-up is made in the bender, the conduit is turned until the bead shows level. As each subsequent bend is made, this precaution will ensure each bend being in perfect alignment with the preceding one. When a series of conduits bent by this method are mounted in multiple, the entire layout will be free of distorted units. *(K-539) Paul C Ziemke, Oak Ridge, Tenn.*

Fiber on Picker Stick Lengthens Stick Life

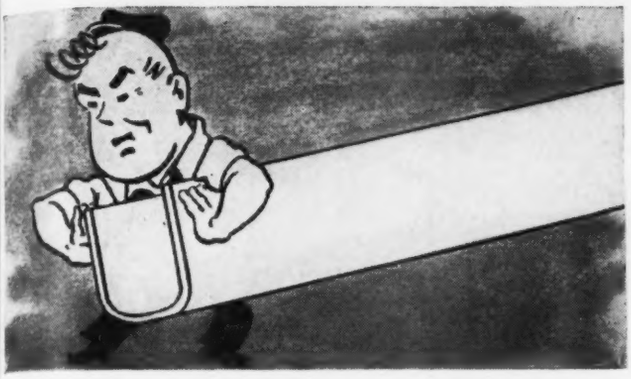


To prolong the life of our loom picker sticks, we fasten a piece of fiber—⅛ in. thick and of the same width as the stick—at the point where the picker strikes the stick. A piece of fiber taken from a discarded shuttle works satisfactorily. The use of the fiber makes our picker sticks last about three times as long as sticks on which the fiber is not used. (K-537) D. H. Steele, Burlington, N. C.

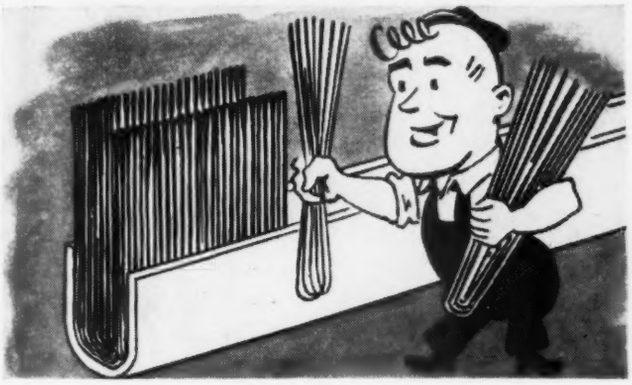
FULLER-GRIPT BRUSHES

are made to

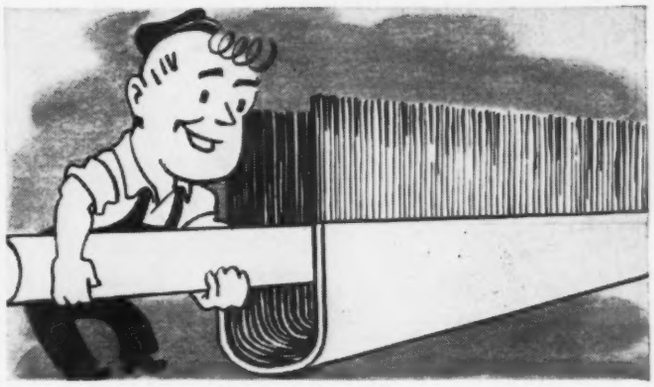
LAST LONGER



1. A strip of steel, brass or bronze is formed into a channel. This metal may be plated to resist corrosion from chemicals and water.

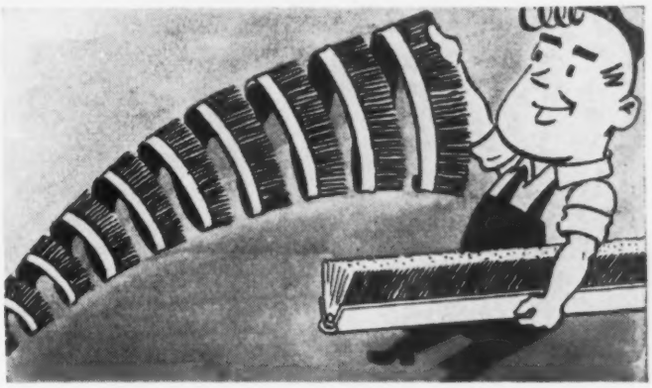


2. Then, filler material of the kind and length to do each particular job best is "hairpinned" and inserted, ends up, in the channel.



3. Next, a plated steel wire is laid along the channel on top of the filler material to anchor it permanently in position.

4. Finally, the sides of the metal strip are clinched under heavy pressure so that the bristles can never fall out.



5. Fuller-Gript brushes can be wound around cores from ¼" to 3 ft. in diameter, spiraled, or laid in straight strips of any length.

Fuller-Gript construction not only gives you a brush that lasts longer, but one of uniform density that provides more efficient brushing action. Fuller-Gript brushes can be designed specifically to do any brushing job. Simple anchoring devices make it possible to install them quickly and so securely that they will not come off even when used on high-speed cylinders.

Our engineers will be glad to discuss the application of Fuller-Gript to any type of machine. We will also send a sample Fuller-Gript strip. Write, wire, or phone.

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BUILT-TO-ORDER BRUSHES FOR YOUR EQUIPMENT

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THIS IS NO. 59 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

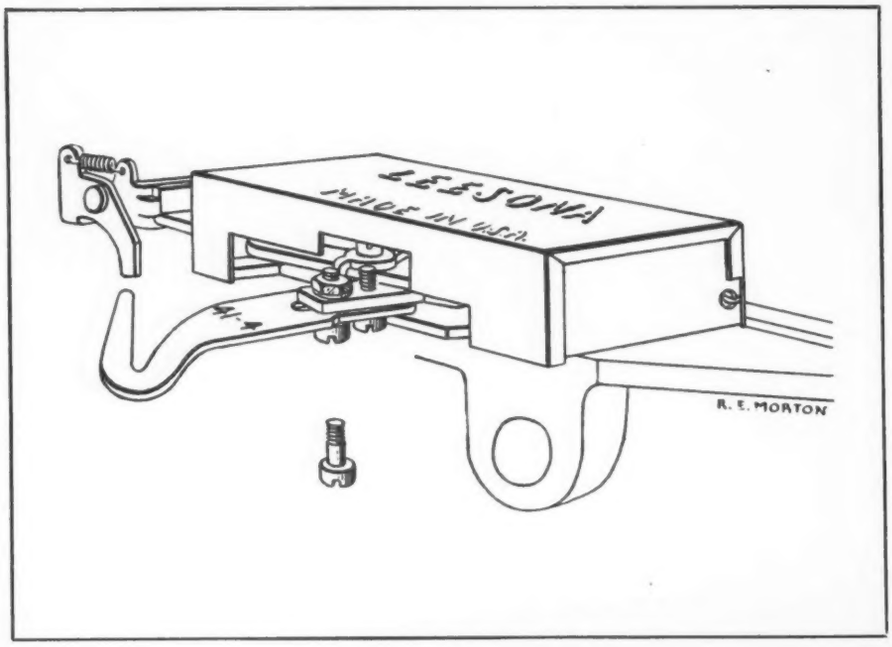

Fig. 1 Attaching Bunch Builder Thread Guide

ATTACHING BUNCH BUILDER THREAD GUIDES (No. 90 Winding Machine)

A new Thread Guide Screw (SC-7941) has been developed to eliminate the danger of the screw loosening and allowing the Thread Guide to get out of adjustment.

The body of this screw is made a very close fit for the slot of the Thread Guide, so that there can be no "play" of the Guide. The screw is threaded so that it is a snug fit in the hole of the Thread Guide Arm.

Both screws used with the Bunch Builder Thread Guide are provided with a lock washer placed under the head of each screw, and the outer screw has a tight-fitting nut with a lock washer under it. (The inner screw does not have a nut.)

HOW TO FIGURE SPINDLE SPEED ON PRECISION WINDING MACHINE

Even though you don't have a speed indicator, you can still determine the spindle speed on a precision winding machine, easily and with reasonable accuracy, by using a watch and your finger.

Place the finger at some point where a reciprocating part will touch it lightly at the end of each stroke. Count the number of strokes per minute, multiply by twice the number of winds being used, and you will have a figure approximately equal to the spindle speed.

Fig. 2 Figuring spindle speed without use of speed indicator.

*Reg. U. S. Pat. Off. September 1946

See our Catalog in TEXTILE WORLD YEARBOOK
23.6.2

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LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

THE OLD EMPLOYEE

Should a department head get rid of older employees merely to recruit a younger, and possibly more vigorous, staff?

I'VE GOT A COUPLE OF OLD MEN I'M GOING TO GET RID OF NOW THAT I CAN FIND A FEW YOUNGER MEN.
WHY, BILL, YOU WERE GLAD TO GET THOSE FELLERS WHEN YOU HIRED 'EM. THEY'RE STEADY WORKERS. WHAT'S WRONG?
OH, THEY'RE ALL RIGHT AS FAR AS THEY GO, BUT THEY JUST DON'T GO FAR ENOUGH.
THEY'RE WILLING TO WORK, AREN'T THEY? AND THE QUALITY OF THEIR OUTPUT IS O.K.?
YES, THEY DO ALL THEY CAN, BUT OLDER MEN AND WOMEN JUST CAN'T DO WHAT A YOUNG MAN CAN.
IF THESE OLDER MEN AND WOMEN ARE LOYAL WORKERS, YOU'LL DO WRONG TO REPLACE THEM.
I'M TIRED FOOLIN' WITH 'EM. I'M GOING TO GET ME SOME YOUNGER MEN. WHAT SAY, JOE?
FIRE 'EM ONLY WHEN INCOMPETENT, BILL. ALL OLD FOLKS AREN'T USELESS IN THE MILL. DO YOU AGREE, FOLKS?
3
4

Letters From Readers

Know Your Employees' Physical Condition

"Physical Exams for Workers"
(Pete & Bill, July 1946)

Dear Pete & Bill:

Physical examinations for mill employees should be instituted by management. A mere physical disability should not necessarily prompt the mill to release an employee. Length of service, quality of work, and the job being accomplished can be weighed against any physical impairment. It is possible that a worker not up to par has qualities which outshine the perfect specimen. However, it can do no harm for management to have on record the physical standards for every worker.

Should it develop that a worker has a chronic ailment which could be aggravated by a continuance of work, then management would have no other recourse than to let that employee go. That would have benefits for both parties. However, management would do well to pension off the faithful employee who has incurred such disability during his period of long employment with such concern. The short-term worker, unless he has proven his merits on the job, should be relieved if his disability is such as to handicap a good or average production.

The functioning of an organization on a profitable basis can be attained only by better results and less excuses. (PB 901)

Physical Exams Pay Dividends

"Physical Exams for Workers"
(Pete & Bill, July 1946)

Dear Pete & Bill:

Every plant can save money for itself and many headaches for its supervisors if applicants for employment are required to take a physical examination

previous to being hired. Such an examination will expose physical weaknesses which may be considered in the assignment of the employee, and in some cases save the firm from hiring a person who could never be anything but a liability. Many a person has weak eyes and either does not realize it or will not admit it; and many times such people, especially those who are ignorant of their weakness, are considered "dumb," or at least incapable of learning, when the only trouble is their inability to see properly. Such people may be required to obtain and use glasses or may be assigned to work requiring less keen eyesight.

It is the easiest thing in the world for a ruptured person to enter the employ of a mill which requires no physical examination, and, after a few days or weeks, claim to have been ruptured while at work. The insurance company pays the bills for an operation, and in the end the mill pays in higher rates. It is possible for a person to have a rupture and be unaware of it until some unusual strain enlarges it. Other types of injury or illness also come to light under the doctor's examination.

I am convinced that pre-employment physical examinations, followed up by an intelligently administered safety and health program, will result in many benefits, including higher efficiency, less absenteeism, fewer problems for overseers, (I mean help problems which detract from their production and quality supervision), and lower insurance rates. All these add up to larger profits to the mill. (PB 903)

One Overseer's Kinfolk Do a Fine Job

"Supervisors' Kinfolk"
(Pete & Bill, July 1946)

Dear Pete & Bill:

For over 25 years, I have watched the "family" of a supervisor in a large plant where I have been employed measure up in a record that is a striking example of cooperative and productive workmanship. This supervisor, a boss dyer, has over that period of time employed, beside his immediate family, his brother and several nephews and nieces. They all seem to have operated in the pride of a family affair.

The supervisor was, and is, known for his impartial distribution of work, and no fair-minded employee in this department can cite an instance of "family favoritism." On the basis of personal observation, I feel Bill has permitted a stupid assumption to lose him a potential asset. (PB 902)

A Bible of German Synthetics

SYNTHETIC FIBER DEVELOPMENTS IN GERMANY, compiled by Leroy H. Smith; Textile Research Institute, New York; 1,042 pages, $10.00.

This compendium of German technology is the result of the visit to Germany by the Synthetic Fibers Team under the Textiles Sub-Committee of TIIC. It surveys the general textile situation in Germany briefly and then goes into detail on the various synthetic yarn processes. It is illustrated with diagrams, charts, and photographs, and has a supplement in larger format containing 22 more charts, most of them fold-ins, which were too large to be carried in the book itself. Nothing like this report has ever been published before and may never be again, since it is obviously rare that opportunity is offered to bring together practically the entire body of technical knowledge with respect to a vastly complex branch of the chemical and textile industries.

The Industrial Drama of the War

ARSENAL OF DEMOCRACY, by Donald M. Nelson; Harcourt, Brace & Co., New York, 440 pages; $4.00.

A reading of this dramatic account of America's arming brings a kind of nostalgia for the days when there was a plan and a reason for government control of industry, and when the giants of industry and politics were jockeying for positions in the race that built the greatest industrial output the world has ever seen.

Textile men who lived through the period from the early phases of the "defense program" to the culmination of WPB in 1944 and the planning of reconversion, will take pleasure in reading an organized presentation of the events some of which were unknown or only guessed at the time. Although the 36 billion yards of cotton textiles, which Donald Nelson mentions, do not bulk too importantly against the 434,000,000 tons of steel, the 2,400,000 military trucks, the 300,000 war planes, etc., there are spots in the book where the textile story breaks through.

The story of American war production "is too big to be told in full by any one man", says Nelson, yet he does a good and well-rounded job. He does not ignore frictions or misunderstandings and by frank analysis makes the book what a reviewer might call "a human document" as well as a factual record.

The book contains much sound advice on problems and programs that may recur in the country's future history. Nelson's criticisms seem constructive. Because of the many pages TEXTILE WORLD devoted to WPB and related matters over the defense and war years, we would like to quote what he says about the fourth estate—"The reporters who specialized on the war production program knew their stuff, and in accuracy and fairness I think they had an extremely high batting average."

Fabrics Traced From Their Beginnings

AMERICA'S FABRICS, by Zehna Bendure and Gladys Pfeiffer; The Macmillan Co., New York; 688 pages, illustrated; $10.00.

Here is an all-inclusive work on textiles in the language of the layman well-suited for use in home economics classes, for training retail store personnel, etc. It is a reasonable reference work for anyone interested in textiles who does not require the technician's or manufacturer's viewpoint. Nine chapters are devoted to fibers or families of fibers; five to the mechanical working of these fibers into yarns and cloth; five to the chemistry, theory, practices, and results of finishing; two to fabrics as such; and one to testing and standards. The book tells the story of every fiber in ordinary use today and acquaints the reader with the essential steps in producing yarns, in weaving, in knitting, in felting, and in finishing. A dictionary of fabrics covering nearly 200 names with pictures of each from Airplane cloth to Zibeline accounts for 51 pages. There are 12 full-page color plates largely of fabrics, but devoted also to the theory of color in connection with the section devoted to that subject.

There is scarcely a page without illustration and many have several. Without counting them, it seems safe to say that there are at least 2,000 pictures in the volume.

DAY-LINE*

The "ONE-MAN" *Fixture*

This heavy-duty Day-Brite Industrial Fluorescent system saves time and money on every installation —every service operation:

- **One man *alone* can quickly hang the Day-Line with chain or patented Day-Brite "Ice-Tong" hangers.**
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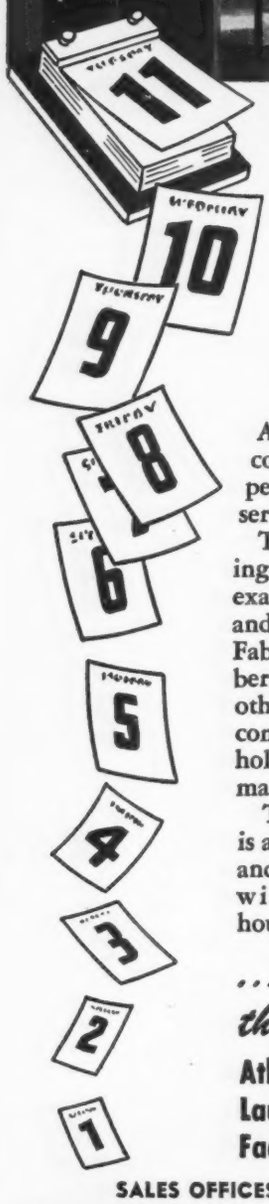

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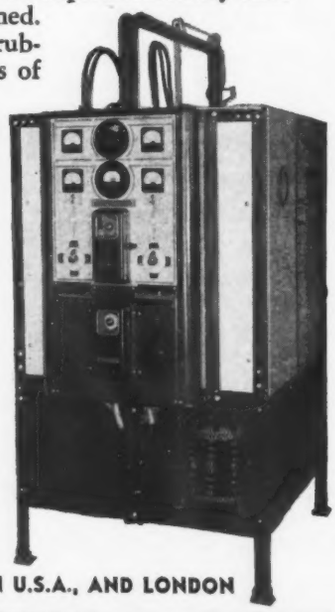

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Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Will This Shuttle Box Stop Washboard Shuttles?

It is no secret that a reed which is out of line or which has protruding wires will cause the condition known as a "washboard shuttle." The first step to take in remedying this condition is, of course, to line up correctly the boxes and reed. Other steps include properly timing an early shed or a late pick.

However, there is another cause of washboard shuttles which the writer believes is of more frequent occurence than any of these other conditions. This cause is the location of the binder in the shuttle box.

Washboard shuttles seldom occur on a loom equipped with a shuttle box in which the binder is located in the front of the box, but this defect in shuttles occurs frequently on a loom with the binder in the back of the box. From simple reasoning, it would seem that a shuttle in the latter-type box has a tendency to hit the reed harder than a shuttle in the former-type box.

The remedy, of course, is to place the binder in the front of the box or to modify the box in such a way as to obtain the same result. Leave

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the box back parallel with the path of the shuttle. Change the front plate of the box so that the back part of it (near the picker) is parallel with the box back and the front part is bent away from the box back at a small angle. The effect of this bending is to enlarge the entrance to the box so that in leaving the box the shuttle does not touch the front end of the front plate. The shuttle will be thrown straight, but it will not hit the reed so hard as when being picked from a conventional box.

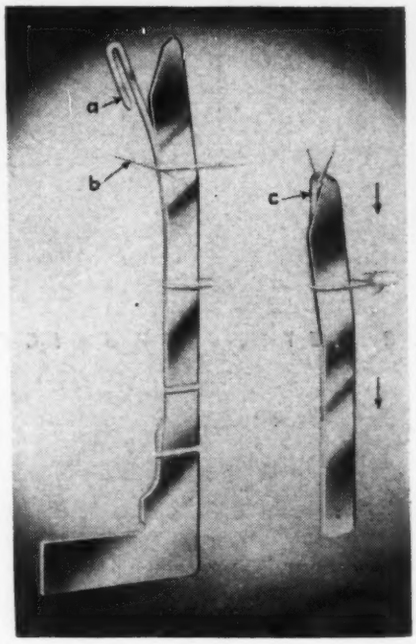
This modified box will also cause less damage to the filling and to the front of the shuttle. *(R-293)*

Will a shuttle box changed as specified here reduce washboard shuttles? TEXTILE WORLD *welcomes discussion of this question by readers of Round Table*—EDITOR.

New Needle Combines Beard and Latch Features

Your article on knitting needles in the April issue was quite interesting and comprehensive, and we feel certain that the readers of TEXTILE WORLD will be interested in a knitting-needle development on which we are now working.

For some time we have been endeavoring to develop a needle which combines the fine-knitting qualities of the spring-beard needle with the hook-closing feature of the latch needle. The final form of the needle



When hook **a** *is engaged by feed yarn* **b**, *tension on the yarn draws the hook into its closed position* **c**.

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By contrast with old-line factoring methods, this pliable Factoring-Financing is readily bent to meet today's conditions and tomorrow's needs. It presents unusual profit-making opportunities by providing adequate capital, at low cost, for both manufacturing and selling.

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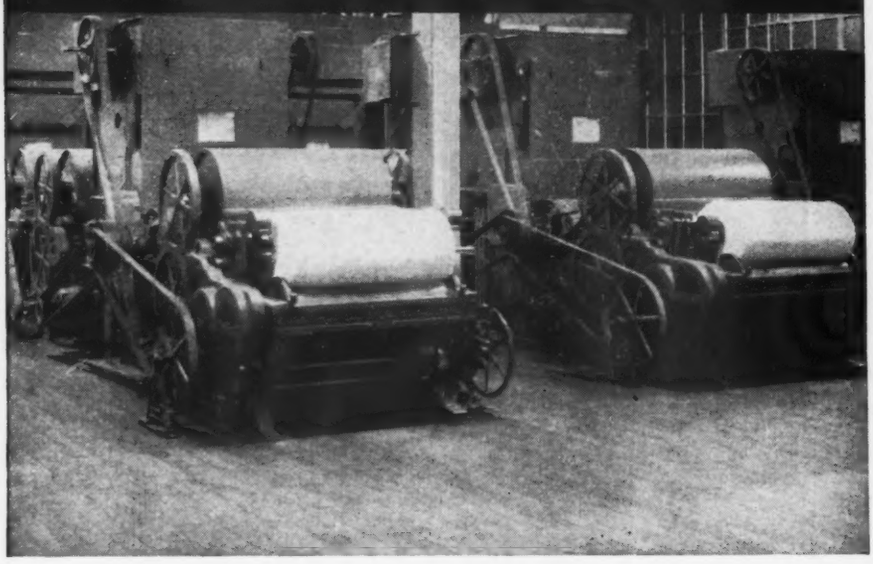

Preserve them with the
TENNANT SYSTEM
which eliminates scrubbing

These are not new floors although we admit they look like it. After being dry-cleaned with the Tennant System *your* mill floor will look like new, too—and it will have many other qualities of a newly laid floor. The clean, smooth, hard surface will be free of splinters. The sub-flooring will be dry, eliminating the danger of decay. Investigate the Tennant System to learn how dry-cleaning can preserve your floors as well as provide other advantages of a clean, bright surface.

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as we have developed it is shown in the accompanying illustration.

The spring hook *a* is normally positioned so that it stands away from the needle sufficiently to engage the feed yarn *b*, the tension on which draws the hook back and closes it, as at *c*. When the new loop is formed, it is taken by the body of the needle at the transfer point directly behind the closed hook.

In such an arrangement, the spring-hook member can be of a strength sufficient only to engage and draw uniformly the particular yarn for which the needle is intended. Fabric tension and needle alignment are maintained by the more rigid body member. (*R*-294)

Mixed Filling Causes Bars in Worsted Cloth

Mixed filling, causing bars in the cloth, is a frequent cause of trouble in a fancy worsted mill. A mill making mixture cloths is faced with the problem of keeping separate colors some of which, to a not too experienced eye, are alike. Weavers generally make a practice of matching every bobbin they place into the filling magazine, but they are not infallible. Any bobbin of yarn which is different from the proper yarn stands a good chance of finding its way into the cloth, thus causing a bar.

When yarn is taken to a winding machine to be wound onto bobbins for the looms, the yarn should be carefully checked to make certain that all cones or cheeses are of the proper count, shade, and lot number. As the winder operator places the package on the machine, he should examine each one. This practice takes but a few seconds and is well worth the time. A winder's "color eye" is sure to develop with practice and will become a benefit to the mill at large.

After the yarn is wound on bobbins, it is a wise practice to have each bobbin examined before it is packed in the box to be delivered to the loom. Many mistakes have been stopped in this way, with a resultant saving in yardage which might otherwise have been woven with wrong yarn. At this examination, there is a good chance of stopping bobbins which have been poorly wound and which would be discarded by the weaver, with the yarn on the bobbins possibly finding its way into waste. When these boxes are packed, a card should be placed inside to show exactly what the box contains.

Some mills make a practice of stor-

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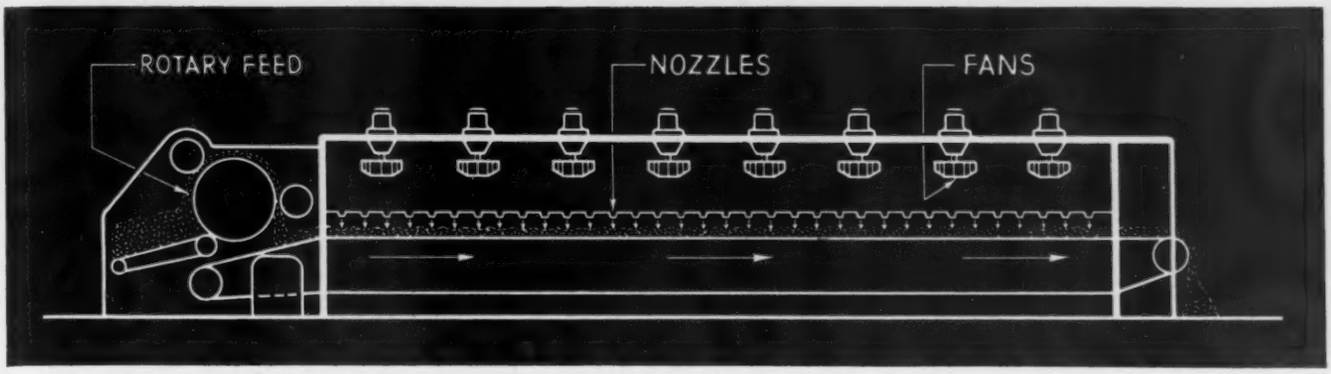
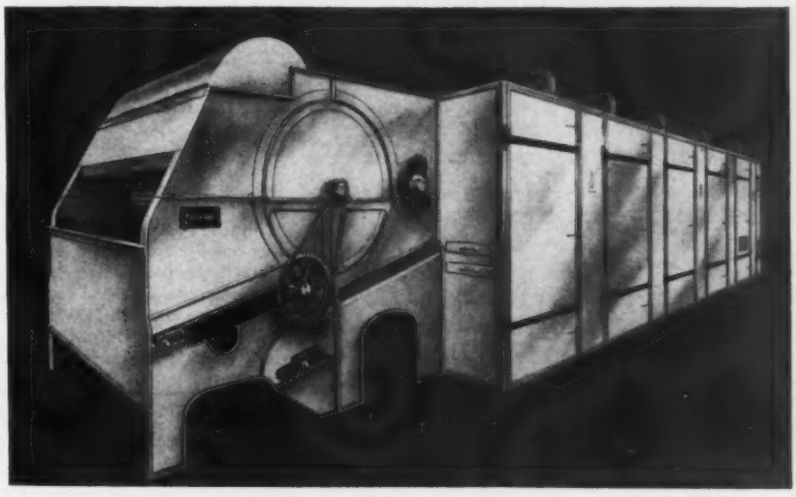


The patented features of design that make possible the "breathing action" of Proctor impact drying, assure you the best possible results when it comes to drying cotton or wool stock or other fibrous materials. Stock dried in the Proctor impact type dryer is carried through the drying chambers on either a woven wire or perforated metal plate continuous conveyor. Heated air, at high velocity, is intermittently impinged against the bed of stock on the conveyor as it moves through the dryer. As the material is subjected to the impingement of air, it compresses and as it passes between one jet of air and the next, it expands, in a breathing-like action, as can be seen from the longitudinal view above. This movement—or "breathing action"—permits heated air to circulate all the way through the bed of material and promotes the uniform, thorough and rapid drying possible with this Proctor impact system. The temperatures within the dryer, as well as the velocity of the air circulation to which the stock is subjected, can be varied to suit the particular requirements of the material being dried. Considered from every angle, impact drying, with its "breathing action", is the ideal method for the correct drying of fibrous materials. If stock drying is a part of your plant operation, write today, telling us as much about your problem as possible. Our engineers will gladly show you how the Proctor impact dryer can fit into your production line.



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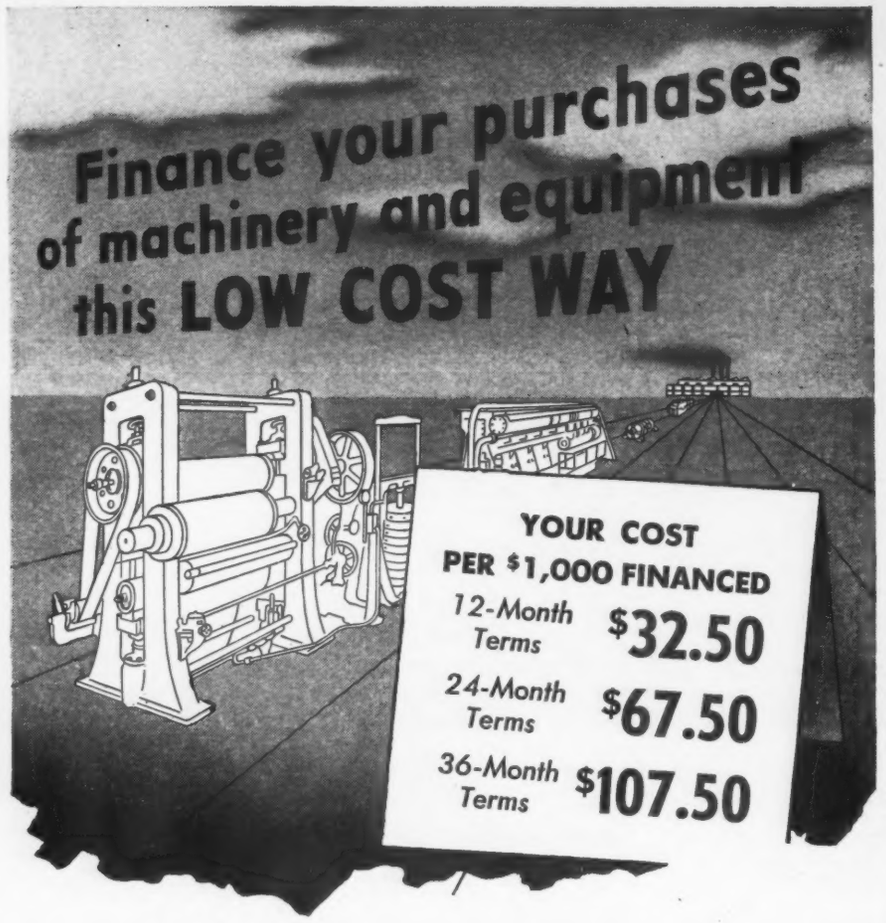
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ing wound filling in cases until it is needed at the looms. If this is the procedure, care should be exercised in properly marking the cases, or other containers, with the shade number, count, and lot number showing on the outside; and a card should be placed inside showing the same information. If at all possible, a cover should be tacked on the box to eliminate the possibility of any odd bobbins finding their way into the container and probably into the cloth.

Where it is not practicable to use large containers, or when the wound yarn is to be taken to the looms shortly, it is advisable to place the yarn in boxes that will fit the filling-box rack on the loom. These boxes should not be packed too full, as there is danger of bobbins falling off and getting mixed with yarn in other boxes.

When these filling boxes are to be stored, each box should contain a card showing exactly what yarn is in the box—count, shade, and lot number. Too many overseers of filling departments trust too much to their memories; someone else may have to handle the yarn when the overseer is not present. Although it is advisable to keep all boxes containing the same lot of yarn in one storage place, this practice does not eliminate the necessity for marking each box in the group.

It is good practice for each loom to carry a special card showing the count, shade, and lot of filling being used at that particular loom, since such a card will give the filling carrier the means for a quick check. In addition, the filling carrier should check one of the bobbins in the new box against one of those in the box at the loom. *(R-296)*

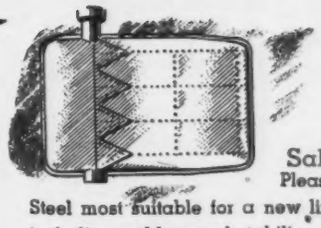
Power-House Operators Need Priority Guide

In any industrial plant, a curtailment of power service may occur at any time because of some failure of the power-generating equipment. To avoid confusion, spoilage of material, or excessive loss of production, it is essential that power-house operators be correctly informed as to the processes in the mill most urgently needed so far as concerns the avilable power supply. I suggest the following procedure for accomplishing this purpose.

Make an occasional survey of the mill to ascertain the departments and processes from which uninterrupted production is most needed. Insert cards of different colors in the card

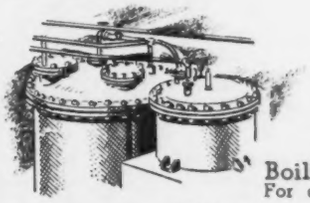
Are your Corrosion Problems

like any of these?

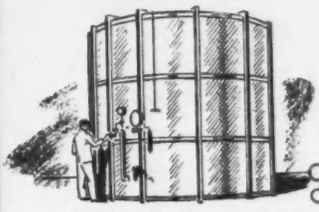


Salt Water?
Please suggest the type of Stainless Steel most suitable for a new line of highest-quality marine trim, including rudders and stabilizer fins.

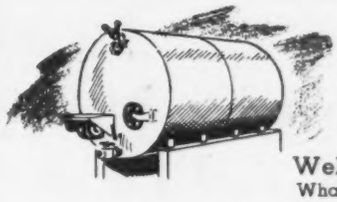
Fruit Juices?
Will E-S 18-8 Stainless (Type 302) canning reservoirs be all right for handling citrous fruit juices including lemon juice?



Boiling Peroxide?
For a new oxidation process using boiling concentrated hydrogen peroxide, would low-carbon E-S 18-8 stainless (Type 304) containers be resistant?



Chloride Storage?
Our processing involves storing cold alkali-metal chloride solutions (aqueous) in E-S 18-8 stainless tanks. How can we inhibit pitting at the liquid line?



Welded Vessels?
What type of Stainless would you recommend for large all-welded autoclaves to handle reactions of maleic anhydride in making synthetic resins?

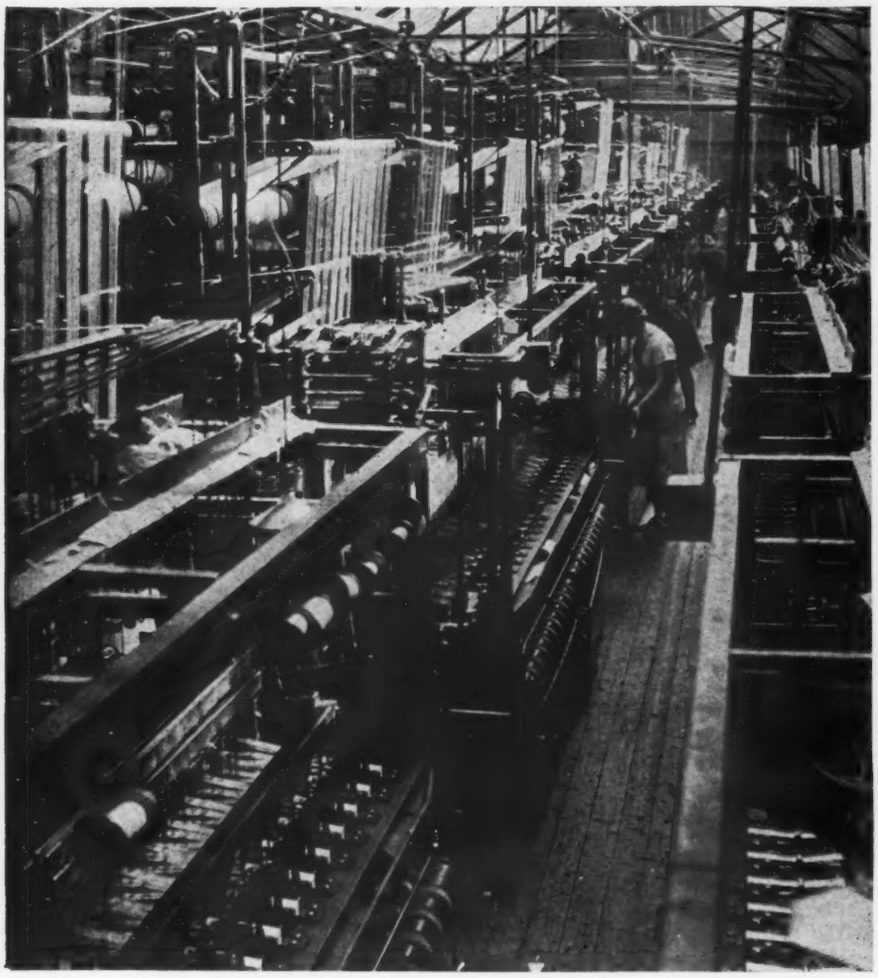
Everyone knows that Stainless is ideal for handling nitric acid—but what about corrosion from these other chemicals? Eastern's Technical Staff answer questions like these every day. Sometimes the answer can be found only with test sheets; more often the experience for which Eastern technical men have gained their esteem provides a rapid, accurate solution to the problem. And much basic, useful information on the corrosion resistance of all types of Stainless Steel is in the new complete catalog "Eastern Stainless Steel Sheets." Write for your copy. JMLco E-FF1

"Ask EASTERN for the Answer when STAINLESS is the Question"

ES

EASTERN STAINLESS STEEL CORPORATION
BALTIMORE 3, MARYLAND

CLUTSOM HIGH SPEED SHUTTLELESS LOOMS



A Battery of Clutsom High Speed Shuttleless Looms

SELLERS MARKETS WILL NOT LAST FOREVER

The Clutsom High Speed Shuttleless Loom has higher production at less cost than any other narrow fabric loom in existence.

Comparative figures prove that Clutsom High Speed Shuttleless looms produce over three times the output of Shuttle Looms for the same payroll. No quill winding—no down time for replacement of Shuttles—continuous filler feed-high speed production—All these and other factors contribute to the amazing result given above.

All mills are faced with rising costs of production—let us show you how you can lower yours.

Clutsom Looms are available, we can accept a limited number of orders for delivery this year.

CLUTSOM MACHINES INC.

205 EAST 42 STREET **NEW YORK**

Telephone MUrray Hill 4-2327 **FACTORY: Springdale, Connecticut**

holders on the switchboard panel in the power-control room. These colored cards would indicate the order of preference for power; as, green in the holder at the dye-house switch would signify that first preference for power would be given the dye house. Switches for other departments would be assigned other colors, and the descending order of preference established for the various colors.

If the order of priority should change, the colors should be changed accordingly; as, green may be changed to the weave-room switch if stopping the looms should become more expensive to the mill than stopping the dye processes.

A variation of this procedure, of course, is to use all cards of one color and number them to designate the preferences. (*R*-295)

Spinning Overseer Uses Textile World as Guide

I am a constant reader of TEXTILE WORLD, and I find something in every issue that I can use on my job. One example of using the technical material you publish is the method I now use for figuring production efficiency in the spinning department of our mill.

About two years ago, I was placed in charge of our spinning department. A few years prior to that, new long-draft frames had been installed in place of the old conventional-draft frames; but no change was made in the method used for figuring efficiency.

The old method was based upon multiplying a certain production factor by the number of hanks run and comparing the result with an established standard for the number of hours run. Of course, after the new frames were installed our efficiency percentage always went well above 100%.

I determined to set up a system which would give a true picture of departmental efficiency. Since we did not have a fully staffed time-study department, I began looking about for ideas which I could adapt to my own needs. In the pages of TEXTILE WORLD, I found all the information I needed. Using this information as a guide, I worked out a method for figuring the efficiency of my department which placed all calculations on a pound basis. We are now operating at something less than 100% efficiency, and our figures show it! (*R*286)

TUBE-TURN WELDING FITTINGS

TRADE MARK

. . . now available, including 45°, 90° and 180° elbows, tees, caps, reducers, lap joint stub ends. Write for the name of your nearest distributor. Return the coupon for new bulletin giving full information on Tube-Turn Stainless Steel Welding Fittings.

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TUBE TURNS, Inc., LOUISVILLE 1, KENTUCKY
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Questions and Answers

Tropical-Worsted Cloth Has Uneven Warp Yarns

Technical Editor:

We have been making a tropical-worsted fabric to the following construction specifications:

Ends 32/2, 2920
Picks 32/2, 42 per in.
Reed 22 x 2
Reed width 66½ in.

The finishing process is as follows: Scour for 10 min., rinse 10 min., second soap for 55 min., rinse for 1 hr. over board—all at 105° F. temperature. Vacuum, dry, shear, dewey, press, semi-decate for 2½ min. Soap is 6 oz., with 2½ oz. soda ash to gallon.

You will note on the sample inclosed an appearance in the finished goods like a wide wale and an entwining twill. This effect is noticeable slightly in goods from the loom but is accentuated in the finished goods.

We have tried various things to eliminate this effect in drawing-in; using skip drafts; cross drafts; 4, 6, and 8 harnesses. We also tried the whip roll on the loom at various heights. The effect seems to come from various tensions on yarn; and as the result of shrinkage in finishing, these yarn threads seem to be set in the fabric and make it look like a fancy weave.

Our warping is done on a pinless warp mill from dresser spools.

So far, the effect persists despite everything we have tried. The yarn in warp and filling is French Spun 32/2, 13 turns per inch in the ply yarn, regular twist.

Will you give us your opinion of what might be causing this condition and also a remedy for it? (9125)

The tropical worsted submitted shows definite signs of uneven threads in the warp. The warp appears to have been woven loosely; and by picking up with a pin any of the threads that add to the appearance of a "weave" in the cloth, it will be seen that those threads are loose.

It seems that this effect in the cloth may be caused by the construction. A warp of 2920 ends of 32/2 appears a little tight, and this tightness does not allow the ends properly to lay side by

(Continued on page 192)

YARNS MAY BE SYNTHETIC . . BUT STATIC TROUBLES ARE REAL!

ELIMINATE ALL STATIC WITH THE CHAPMAN ELECTRIC NEUTRALIZER

Each new synthetic, each new method, each new machine—has a new set of problems—some easily solved, others not so simply. For years the problem of static in textile mill routine was costly, time-devouring, constantly troublesome. Humidity controls are not the complete answer for static. And excess humidity is expensive.

Today, the Chapman Electric Neutralizer, in thousands of plants and mills is doing away with all static troubles on which static — from any cause — may otherwise slow down production or prove a nuisance or an expense.

Chapman Electric Neutralizers are eliminating static on:

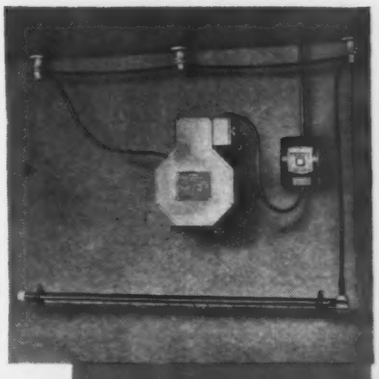
WOOLEN CARDS	**WORSTED CARDS**	**FOLDERS**
HIGH SPEED SLASHERS	**GARNETTS**	**NAPPERS**
HIGH SPEED WARPERS	**COTTON CARDS**	**DRYERS**

. . . and other machines, in many different operations, to speed production. And now, Chapman Neutralizers will expedite new peace-time output.

HOW IT WORKS — A Chapman Power Unit or transformer produces a corrective alternating charge at suitable tension, which is delivered through the Chapman Inductor Bar *to the material.* Whether the static charge is positive or negative, it is instantly neutralized, safely, by the corrective charge from the Inductor Bar.

STOP COSTLY DELAYS! SPEED PRODUCTION BY ENDING STATIC NUISANCE ONCE AND FOR ALL!

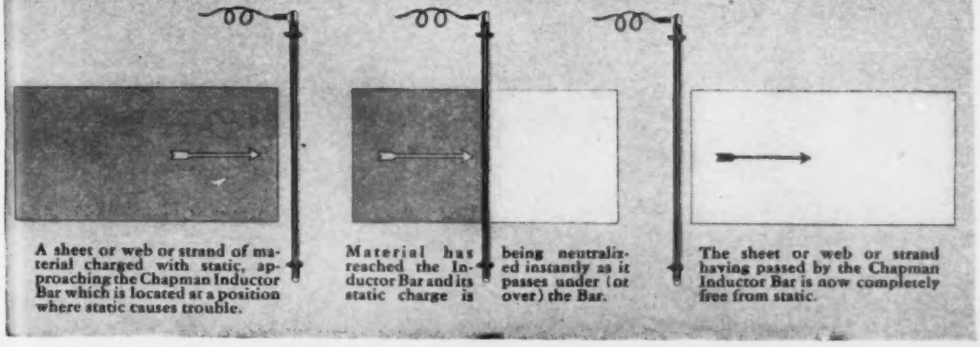
Call upon the Chapman Engineering Service! Write us! We will analyze your specific static problems.



WOOLEN CARDS
— all equipped with Chapman Static Neutralizers

WOOLEN ROVING
before and after static charges are eliminated

FUNCTIONAL OPERATION OF THE CHAPMAN NEUTRALIZER



A sheet or web or strand of material charged with static, approaching the Chapman Inductor Bar which is located at a position where static causes trouble.

Material has reached the Inductor Bar and its static charge is being neutralized instantly as it passes under (or over) the Bar.

The sheet or web or strand having passed by the Chapman Inductor Bar is now completely free from static.

CHAPMAN ELECTRIC NEUTRALIZER COMPANY

ESTABLISHED 1904

PORTLAND, 6, MAINE

There are Switch and Circuit Breaker

CONDULETS

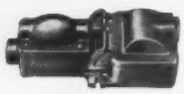
CONDULETS are made only by CROUSE-HINDS

to meet your every need.

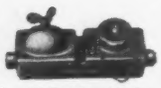
The illustrations show a representative selection from the hundreds of different switch and circuit breaker CONDULETS—each designed for its special purpose, to help you do the job and do it right.

No. 2
of a series of advertisements which demonstrate that CROUSE-HINDS "complete line" means much more than just a range of sizes—there is a wide variety of highly specialized types in each classification.

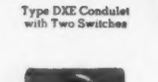
Type C Condulet with Switch


Type FSQ Interlocking Safety Switch and Receptacle Condulet

Type C Condulet with Vaportight Switch


Type FS, Two-Gang Tandem Vaportight Condulet with Switch and Plug Receptacle

Type MSR Two-Gang Watertight Marine Interlocked Switch and Receptacle Condulet


Type DXE Condulet with Two Switches

Type GSB Three-Gang Vaportight Condulet with Switches

Type FST Threadless Condulet with Switch

Type FA Four-Gang Watertight Safety Switch Condulet

Type ZT Safety Switch Condulet

Type WMK Raintight Safety Switch Condulet

Type WMKS Raintight Safety Switch and Interlocking Receptacle Condulet

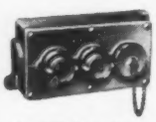
Type FS Condulet with Pilot Light, Switch and Plug Receptacle

Type FS Two-Gang Watertight Marine Switch Condulet

Type GRF Condulet with Switch

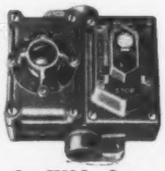
Type EFS Explosion-Proof Switch Condulet

Type FSC Vaportight Push Button Station Condulet


Type MSR Three-Gang Watertight Marine Switch and Receptacle Condulet

Type FHRC Mercury Switch Thermostat Condulet

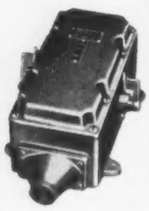
Type DVS Dust Tight and Vaportight Circuit Breaker Condulet

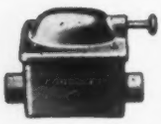

Type EFSC Two-Gang Explosion-Proof Push Button Station and Pilot Light Condulet

Type DVS Dust-Tight and Vaportight Circuit Breaker Condulet

Type FS Vaportight Push Button Station Condulet

Type FG Door Switch Condulet

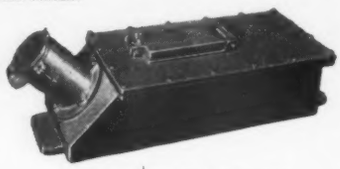

Type YSW Vaportight and Weatherproof Circuit Breaker Condulet

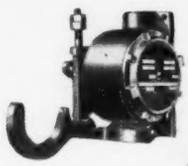

Type FDC Vaportight Secondary Breaker Condulet

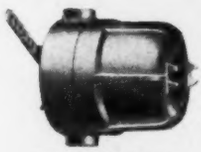
Type FS Vaportight Condulet with Three Switches

Type FS, Five-Gang Condulet with Switches and Plug Receptacles

Type FS Three-Gang Condulet with Switches


Type WBR Weatherproof Circuit Breaker and Receptacle Condulet


Type FGCH Explosion Proof Switch Condulet for Gasoline Bulk Stations


Type EMS Explosion-Proof Mercury Limit Switch Condulet

Type FSPC Explosion-Proof Switch Condulet with Threaded Cover

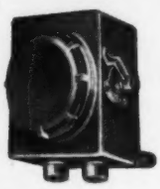
Type EGP Explosion-Proof Mercury Switch Condulet for Panel Mounting

Type FLDC Explosion-Proof Secondary Breaker Condulet

Type FLS Explosion-Proof Switch Condulet

Type EGP Explosion-Proof Push Button Station and Pilot Light Condulet for Panel Mounting

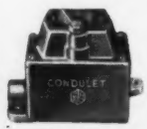
Type FSQC Explosion-Proof Interlocked Receptacle and Switch Condulet

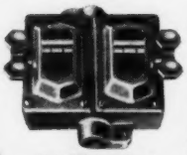

Type GUB Explosion Proof Motor Starting Switch Condulet

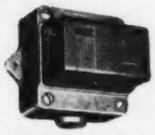
Type GUSC Explosion-Proof Line Starter Condulet

Type EFS Explosion-Proof Push Button Switch Condulet

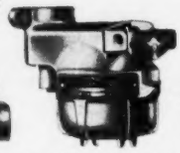
Type HRC Explosion Proof Mercury Switch Thermostat Condulet

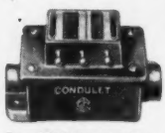

Type EFD Explosion-Proof Motor Starting Switch Condulet

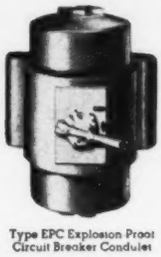

Type EFS Two-Gang Explosion-Proof Push Button Switch Condulet


Type HR Explosion-Proof Thermostat Condulet

Type EFSC Explosion-Proof Control Station Condulet


Type OFC Explosion-Proof Push Button Station Condulet


Type EFSC Explosion-Proof Triple Switch Condulet


Type EPC Explosion Proof Circuit Breaker Condulet

Complete listings of each type are in Conduit Catalog No. 2500 or in supplementary bulletins.

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MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out **COMPLETELY** one coupon for each piece wanted.*

Free FOR THE ASKING

1. "Physical Properties of Synthetic Organic Chemicals" is the title of a 12-page booklet published by Carbide & Carbon Chemicals Corp. Data on physical properties and applications of more than 175 synthetic organic chemicals are presented in tabular form for ready reference.

2. A method of straining condensate from process equipment and returning it to the boiler under high pressure is described in publication No. 3250 published by Cochrane Corp.

3. A "library" of brochures dealing with textile chemical processing subjects has been published by Dexter Chemical Corp. Mercerization, permanent cellulose finishes, and the effects of aniline black on barium determination are subjects discussed.

4. Master valve control for gravity and large-size pressure filters for zeolite softeners is described in a booklet issued by Permutit Co. The booklet describes automatic controls through the use of a master valve, to regulate rate of flow, prevent waste of water in the backwashing and rinsing, and maintain zeolite or sand bed in clean, active condition.

5. Atomizing deaerators for removal of dissolved oxygen from boiler feedwater by atomization are described in publication No. 4160, published by Cochrane Corp.

6. B & W boiler tubes are described, listed, and cataloged in an 8-page folder published Joseph T. Ryerson & Sons, Inc.

7. Raytheon precipitator, an ionization-type air cleaner for removing air-borne contamination, smoke, soot, dust, pollen, and oil mist from the air is described in two pamphlets published by Raytheon Mfg. Co.

8. Wet-finishing machinery, including washing machines, crabbing machines, squeezers, threaders, scutchers, dampening machines, opening and folding machines, adjustable spirals, cloth expanders, wrinkle eliminators, sewing machines, and perches, are pictured and described in a catalog published by Arlington Machine Works.

9. Time-control equipment, Type S and Type D Kwixset time-limit switches, with time capacities from 30 sec. to 24 hr., and embodying features of automatic "on", automatic "on-off," and automatic circuit switching, are described and illustrated in a 4-page bulletin issued by H. C. Thompson Clock Co.

10. Belting for textile machinery and for general power transmission is described and illustrated in catalog No. 46, published by Russell Mfg. Co. Shuttle-strap webbing, twister belts, winder belts, gainer belts, spooler belts, card belts, picker evener belts, and cone belts are cataloged and a nomograph for determining belt speeds in feet per minute is given.

11. Wolmanized lumber, impregnated for protection against decay and termites, and Minalith flame-proof lumber are described in a 4-page folder published by American Lumber & Treating Co. Specifications for both types of treatment, and for lumber species and grades are given.

12. "Two-phase Centrifugal Pumps" is the title of a 16-page catalog published by Ingersoll-Rand Co. Designated Class GT, the pumps are described as being available in capacities up to 2200 gpm., and up to 450 psi.

13. Fabrication by welding, including engineering and design facilities, is described and illustrated with a range of typical products in a 28-page booklet, Form 279-5-46, published by Lukenweld, Inc.

14. "Centrifugal and Static Castings of Plain and Alloy Iron" is the title of a 4-page bulletin, No. 144, published by Shenango-Penn Mold Co. The bulletin includes data on the latitude and characteristics of the centrifugal process, typical centrifugally cast products, field service, machining facilities, and a useful chart giving the various specifications, applications, and chemical and physical characteristics of six standard irons.

15. Contour sawing machines and their use on ten basic jobs requiring internal, external, three-dimensional, radius, circular cutting, and finishing operations are described in a 22-page booklet published by DoALL Co. Titled "DoALL Equals 10 +" the booklet is a pictorial

Instructions for use of post cards on other side

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TEXTILE WORLD, New York 18, N. Y. (September, 1946)

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Coupon void if not filled out completely

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Mill .....
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TEXTILE WORLD, New York 18, N. Y. (September, 1946)

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TEXTILE WORLD
330 West 42nd St.
New York 18, N. Y.

McGraw-Hill Publishing Co., Inc.

time study of metal fabricating shortcuts.

16. Dielectric heaters, for use in heating and drying non-metals, are described in an 8-page bulletin published by Raytheon Mfg. Co. Typical applications are listed, including twist setting, drying of size, drying of impregnated yarns or fabrics, and drying of latex on yarn.

17. Composite tool steels, designated Type R, are cataloged in a 12-page booklet published by Jessop Steel Co. Eight standard sizes of assemblies are described, and data on selections of correct back steel and proper design of metal for a composite knife blade are given.

18. Fluorescent fixtures in eleven standardized models, for use in lighting offices, stores, mills, laboratories, and other buildings and rooms, are described in a catalog issued by Sylvania Electric Products, Inc. Specifications and installation data are given on the basic models which can be installed in single or continuous rolls.

19. Time switches for use on machines and process equipment are described in Bulletin T-55, published by Automatic Temperature Control Co. Data are given on standard line of switches, complete systems designed and built for special characteristics, and low-cost time switches for simple uses.

20. Electronic motor controls, designed to be used as variable-speed drives for all makes and sizes of standard d-c motors and designed to give full-range, adjustable, stepless speeds, are described in Bulletin 178, issued by Electron Equipment Corp.

21. Standardized boilers designed to meet a wide variety of uses, designated type M, are described in Bulletin No. 746, issued by Springfield Boiler Co. Measurements and data on twelve sizes of boilers, ranging from 6,000 to 17,000 lb. of steam per hr., are given.

22. Fire-fighting equipment for use in industrial plants is described in two leaflets issued by B. F. Goodrich Co. Catalog section 3750 describes and illustrates industrial fire hose and couplings for use with the hose. Catalog section 12035 has as its subject carbon dioxide hand fire extinguishers.

23. Pick counters and hank counters for two- and three-shift operations are described and illustrated in Catalog No. 50, published by Durant Mfg. Co. Yardage clocks, revolution counters, centrifugal tachometers, and predetermined-yardage or hank counters are also shown.

24. A packing guide for hydraulic and pneumatic type materials, including such data as uses, types, sizes, tables, and installation instructions has been published by Alexander Bros. Cup packing, V-packing, flange packing, and U-packing are described, and tables of useful information are given.

25. "Instruments and Controls for Process Industries" is the title of Bulletin No. 17, issued by Bailey Meter Co. Controllers, control components, typical systems, multi-element systems, measuring components, and instrument combinations are described and illustrated.

26. Electric fork trucks of 1,000- and 2,000-lb. capacities are described and illustrated in a folder published by Crescent Truck Co. Batteries, travel speeds, hoisting speeds, driving mechanism, motor, brake, travel control, hoist and tilt, steering, and tires are features discussed.

27. A lubrication guide for textile machinery, giving recommended lubricants for cotton-mill, woolen- and worsted-mill, knitting-mill, and rayon-mill machinery, has been published by Keystone Lubricating Co.

28. "Surplus Property — How, What, Where" is the subject of a 32-page booklet published by War Assets Administration. The booklet explains priorities accorded to veterans and other groups, where to get detailed information on sales, and lists the sales offices of WAA.

29. A cartoon course in safety, stressing the importance of clean floors, of reducing accidents, and of keeping production up to par, has been issued by Safety & Maintenance Co.

30. A new Rotameter tube, designed to eliminate the necessity for float-guide rods, and using three ribs formed on the inner surface of tapered glass metering tube, is described and illustrated in Catalog section 15-A, published by Fischer & Porter Co.

31. Synthetic organic chemicals, including over 150 materials, are listed in a 72-page booklet published by Sharples Chemicals, Inc. Specifications, properties, and uses of the chemicals are given.

32. Split-flanged pipe and fittings made from high-silicon iron alloys, in sizes 1 in. to 8 in. I.D., for use with all commonly used acids except hydrofluoric, fuming sulphuric and sulphurous, are cataloged in Bulletin 704 published by Duriron Co., Inc. Specifications for pipe, elbows, hose connections, reducers, expansion joints, and other fittings are given.

33. A steam cleaner, designated Model JO, for cleaning mill and industrial equipment, floors, walls, windows, and building exteriors, and using an atomized mixture of steam, hot water, and cleaning compound applied under pressure through a spray nozzle, is described and illustrated in a 2-page folder published by Homestead Valve Mfg. Co.

TO GET MORE INFORMATION

1. Fill out completely *one space* (name, title, company, address, and item number) for each *bulletin* wanted. Put only one number in each square.

2. Use bottom card only if ordering one to four pieces, both cards if ordering five to eight.

3. Detach, add postage, and mail.

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My Name William L. Wilson

Title Overseer

Mill Clearview Mills, Inc.

Street 1430 So. Main St.

City Clearview State N.C.

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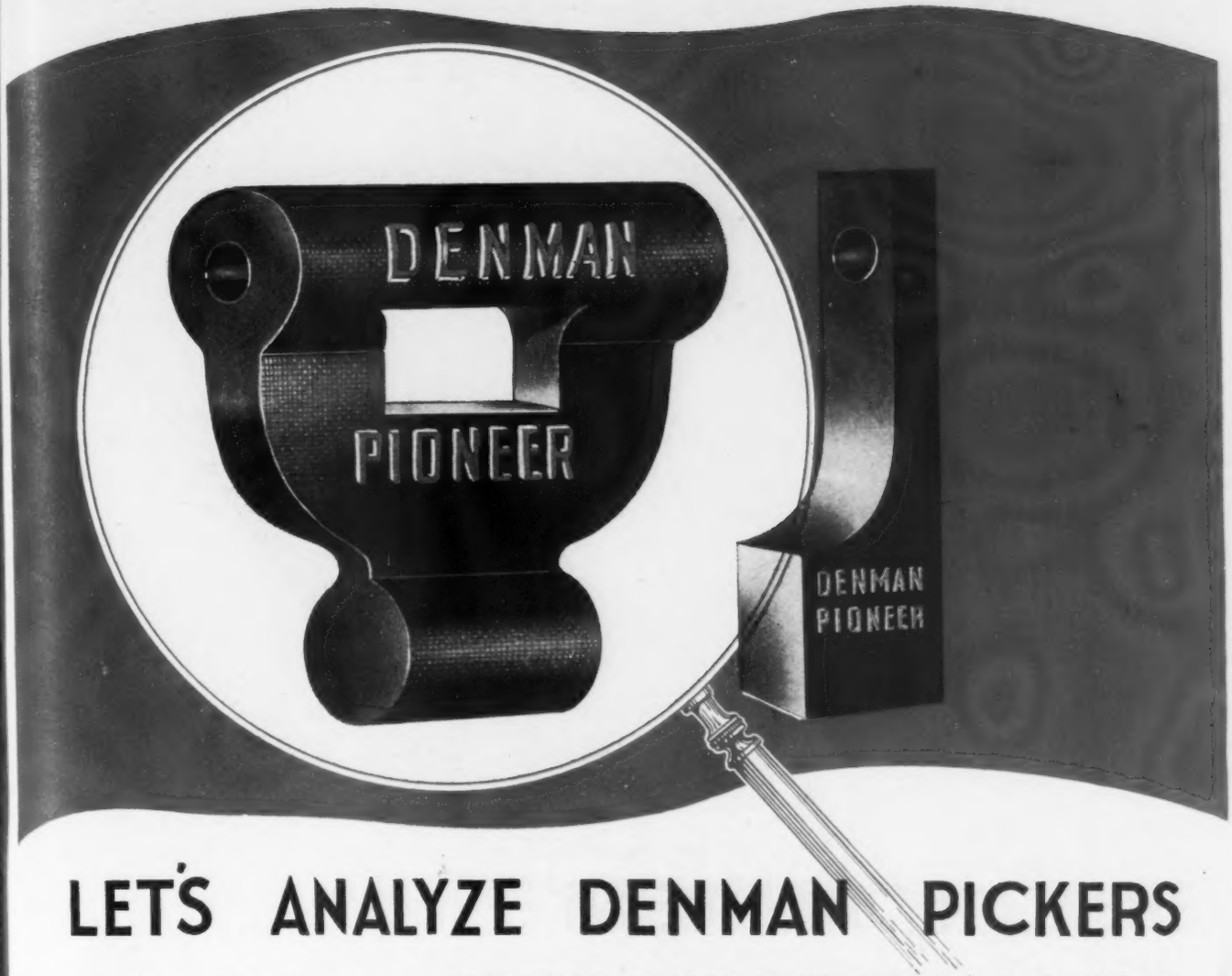


LET'S ANALYZE DENMAN PICKERS

TO FIND OUT WHY THEY GIVE ***LOWEST COST PER LOOM PER YEAR***

Made by
DENMAN TIRE & RUBBER CO.

Manufacturers of
THE FAMOUS
DENMAN LOOP PICKERS

PATENTS *Make Jobs*

One all-important reason is that *every* Denman Pioneer Picker is *individually* molded to assure positive uniformity and constant center-to-center distance.

Another reason is the Denman formula, perfected through a decade, which combines ruggedness and resiliency to a degree never before achieved in any picker.

But even more important to you — Terrell field men are constantly supplying Denman research engineers with first-hand information on mill requirements. Together, they are increasing the KNOW WHY and KNOW HOW that will bring you the even better pickers of the future . . . FIRST!

Exclusive Sales Representative

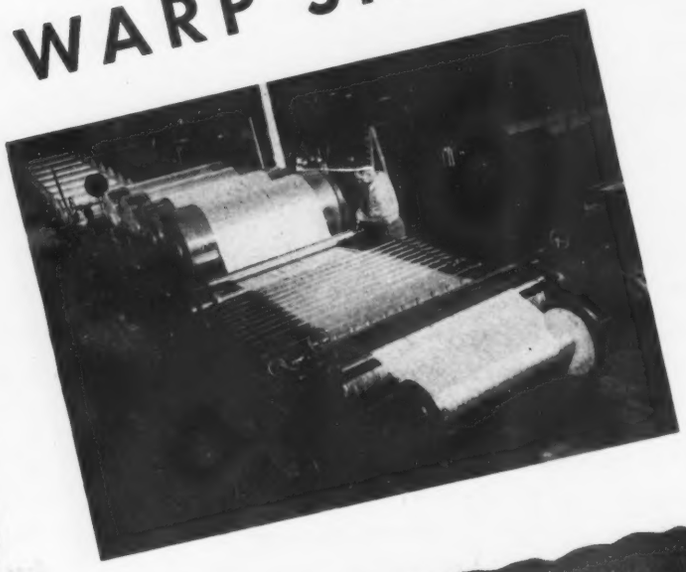
The TERRELL COMPANY *Inc.*

1200 NORTH CHURCH STREET **CHARLOTTE, N. C., U. S. A.**

Approved

...by constant use in a majority of this country's quality mills...and in most foreign countries.

JOHNSON WARP SIZERS



Charles B. Johnson MACHINE WORKS

PATERSON NEW JERSEY

(*Continued from page 186*)

side in the cloth but pushes them up.

The following layout should eliminate your fancy-effect trouble. This layout is one that has been successfully used and one that did not cause any loose-yarn trouble. The weight will be the same as in your layout.

2800 ends 32/2
44 picks 32/2 in the loom
Reed 21 x 2 at 66.7 in. (or reed three in a dent)
Draw 1-4-2-5-3-6.

Your finishing formula seems all right, except that your report that the "weave" appears slightly in cloth direct from the loom might suggest that the cloth should be crabbed.

If your requirements will permit a slightly lighter-weight cloth, the following layout might prove helpful:

2600 ends 32/2
40 picks 32/2 in the loom
Reed 3 per dent at about 65 in.
Draw 1-4-2-5-3-6.

Or a cloth of the same weight but made from heavier yarns:

2500 ends 28/2
38 picks 28/ in the loom
Reeded about 66 in.

These Relative Humidities Are Best for Rayon

Technical Editor:

On chart G-21 in Section 1 of TEXTILE WORLD'S Yearbook and Catalog, under Mill Reference heading, you give recommended humidities for working conditions for all types of yarn except synthetic, including viscose-rayon yarns. I am interested in knowing the recommended humidities for winding, warping, and weaving viscose and acetate rayon.

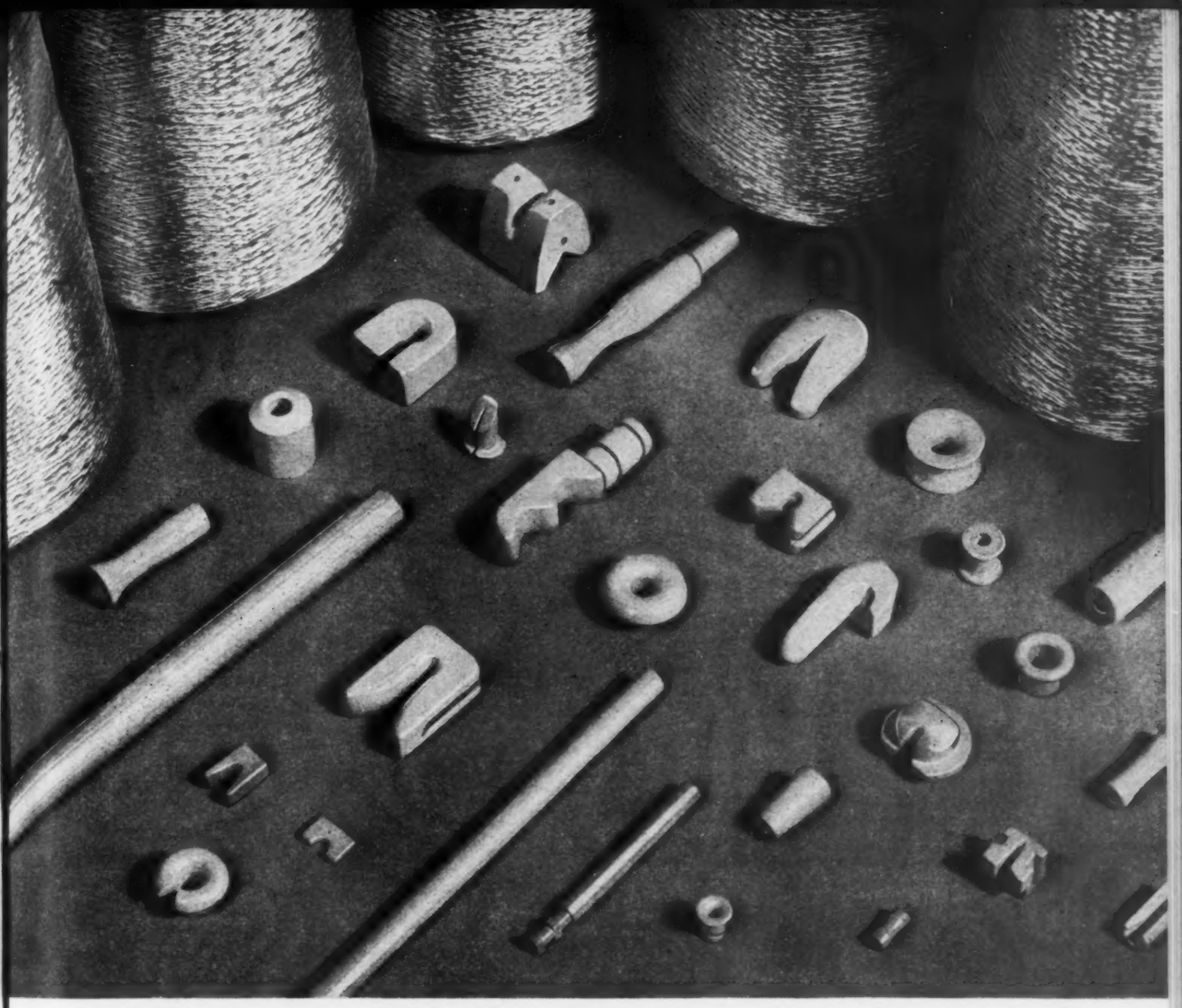
We weave yarn-dyed jacquard tie fabrics (9129)

The relative humidity recommended for winding, warping, and weaving viscose and acetate rayon is as follows:

	Viscose Rayon		*Acetate Rayon*	
	R. H. %	*deg. F.*	*R. H. %*	*deg. F.*
Winding	55	78	60	78
Warping	57	78	62	78
Quilling	57	78	62	78
Weaving	60	78	65	78

The ideal condition for a rayon weaving plant is to keep the stock room and all operating departments within a close range as to relative humidity, having the lowest relative humidity in the stock room and the highest in the weave shed, with a difference between the high and low not to exceed 5%.

A dry bulb reading of 78° F. is suggested in consideration of the comfort of the personnel. Higher dry-bulb readings with equal relative humidity will



ALSIMAG 192

Custom Made Thread Guides

• AlSiMag 192 thread guides are used by practically all of the large manufacturers of synthetic yarns. Several of the largest use AlSiMag 192 guides exclusively. Over a long period of years, their cost and production records have shown that AlSiMag 192 thread guides give them the best quality production at lowest cost. AlSiMag 192 thread guides are custom made and individually machined to close tolerances. Because they are your exact size, shape and design, they are ideal for your production. AlSiMag 192 is hard, homogeneous. Therefore, these guides have no point of sudden failure. Wear is very gradual, simply reveal new surfaces of the same character as the original. Test rods or sample guides made to your requirements will be furnished promptly on request. Let your own tests in your plant give you the facts.

ARMY E NAVY

Original Award July 27, 1942
Second Award February 13, 1943
Third Award September 25, 1943
Fourth Award May 27, 1944
Fifth Award December 2, 1944

AMERICAN LAVA CORPORATION
CHATTANOOGA 5, TENNESSEE
43RD YEAR OF CERAMIC LEADERSHIP

ALSIMAG

ENGINEERING SERVICE OFFICES:
ST. LOUIS, Mo., 1123 Washington Ave., Tel: Garfield 4959 • NEWARK, N. J., 671 Broad Street, Tel: Mitchell 2-8159
CAMBRIDGE, Mass., 38-B Brattle St., Tel: Kirkland 4498 • CHICAGO, 9 S. Clinton St., Tel: Central 1721
SAN FRANCISCO, 163 Second St., Tel: Douglas 2464 • LOS ANGELES, 324 N. San Pedro St., Tel: Mutual 9076

INSURANCE WON'T STOP FIRES!

OR PUT YOU BACK IN PRODUCTION IN A FEW HOURS

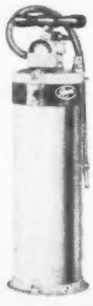
Smoke pours out; the fire alarm sounds; workers rush out of the building; the fire started as a small blaze, but your plant is out of operation for weeks; all the insurance in the world won't put out the fire. But insurance is just as necessary as Pyrene Fire Extinguishers at the start. Standardize on Pyrene Protection. Control of fire in all its phases has been Pyrene's business for almost 40 years. There are specific Pyrene Fire Extinguishers for different classes of fires. A Pyrene jobber will be glad to help you determine your fire hazards and advise best methods for protection from them.

Pyrene

A Pyrene Soda-Acid or Water-Type extinguisher can keep a little fire from getting big—ideal for stores, office and plants or other indoor locations containing ordinary combustibles, wood, textiles, paper. Locations where oil, gas, paints, lacquers, solvents and other flammable liquids are used should be protected by Pyrene Foam, a fire-choking blanket of tiny bubbles. It flows freely over the surface of the burning liquid, covering the whole area of the blaze with an air-tight layer of foam.

CONSULT YOUR NEAREST PYRENE JOBBER OR WRITE FOR ADDITIONAL INFORMATION

For electric equipment, diesel engines and flammable liquids, a Pyrene Vaporizing Liquid extinguisher smothers fire without injury to equipment; a non-conductor, it may be used on electrical equipment still in operation or around live wires.



Pyrene Manufacturing Company
NEWARK 8 NEW JERSEY
Affiliated with the C-O-Two Fire Equipment Co.

be found more to the liking of rayon; at the same time the absolute humidity obtained under such condition will be definitely increased, as may be deduced from the following:

Saturated air (100% r.h.) at 40° F. contains 2.86 grains of water per cubic foot; whereas, the moisture content of saturated air at 100° F. weights 19.97 grains—almost seven times as much.

Wool Scouring Water Centrifuged for Lanolin

Technical Editor:

We understand that lanolin is now being recovered from wool scouring water. Can you give us any information as to how this recovery is done? (9126)

Lanolin is the highly purified waxy material associated with wool as it is sheared from the sheep. Chemically, it is principally the cholesterol esters of various organic acids. It is made from the wool grease recovered from the alkaline soapy scouring liquors which are accumulated from scouring the greasy wool before it is carded.

The scouring liquor is collected in storage tanks and then pumped to a very high-speed centrifuge which produces an emulsion of the wool grease containing about 40% water. This concentrated grease emulsion is washed with hot water, and the grease separated from practically all the water by further centrifuging. This material is marketed as wool grease.

To produce white cosmetic lanolin, commercial wool grease is washed with a sodium-carbonate solution, bleached, and centrifuged.

Worsted Yarn Produced On Long-Draft Machinery

Technical Editor:

We have heard that machines based on new patents and incorporating significant improvements for combing and spinning wool are in production in the United States. We would appreciate your advising us if you have any knowledge of such new processes and give us whatever particulars you may have available. (9132)

Many patented devices are in use on standard wool-combing and -spinning machines, but no new machinery has yet been put on the market. Long-draft cotton machinery is used successfully (TEXTILE WORLD, March, page 123) to manufacture worsted yarns and rayon and wool blends. This is probably the most startling development in this field.

In using this type of equipment, oil-combed tops are put through one gilling operation to reduce their size to 50 gr. per yd. and then processed

More and more textile men say: "IT PAYS TO DRAX*!"

Johnson's DRAX

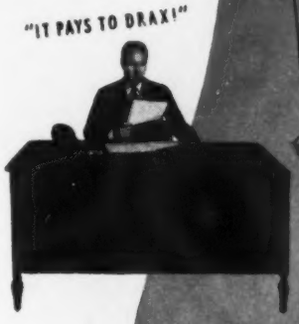
* Trademarks Reg. U. S. Pat. Off.

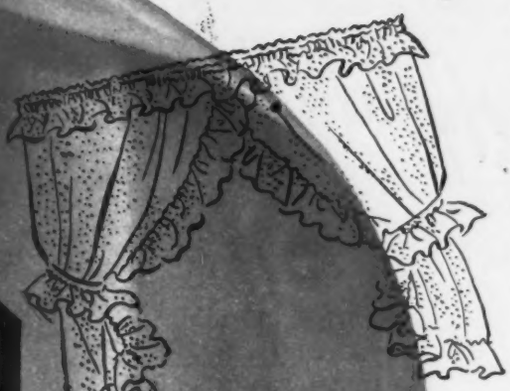
protects fabrics from dirt, soil and liquids!

Every month more mill owners, converters and finishers are realizing the benefits of DRAX. They're finding out that DRAX-protected fabrics make for profits and highly satisfied customers. DRAX gives fabrics an improved "feel" and appearance, makes them resistant to soiling, spotting and water. Consumers like DRAXed merchandise because it keeps its fresh, new look longer.

DRAX, made by the makers of Johnson's Wax, is a stable wax emulsion. It's easy and inexpensive to use, because it is simply "rinsed" into fabrics . . . requires no extra equipment or special skills. Furthermore, DRAX may be used not only on cellulose fibers, but on any textile. It's inert, non-flammable. Customers may have their household fabrics and clothes re-DRAXed at the many laundries and dry cleaners offering DRAX service.

National Johnson advertisements carry the DRAX story. Attractive tags identify DRAXed merchandise. Do as so many other textile men now do — DRAX. Write for full information about DRAX today!





DRAX IS MADE BY THE MAKERS OF JOHNSON'S WAX
(A NAME EVERYONE KNOWS)

This DRAX tag is a sign of plus value!

Write for Free Booklet

S. C. JOHNSON & SON, INC.
Fabric Finishes Division
Racine, Wisconsin

In Canada: S. C. Johnson & Son, Ltd., Brantford, Ont.

SILV-A-KING FLUORESCENT LIGHTING UNITS

FEATURING A PORCELAIN-ENAMEL FINISH THAT INSURES *LIFETIME* HIGH REFLECTIVITY . . . LOWERS MAINTENANCE COSTS BY REDUCING "CLEANING TIME" . . .

Among the many features of SILV-A-KING "Specification" Fluorescent Units:

Starters mounted behind lamp holders are easily accessible.

A half turn of the Camloc permits removal of reflector from hood—no tools—no loose parts.

Next time you're considering lighting fixtures, get the "inside story". Look *inside* the fixture . . . If it's snowy white, gleaming, with a hard lifetime surface that's been fired on at 1600° Fahrenheit . . . chances are you're looking at a SILV-A-KING unit. That's important to you from an efficiency-production angle, for it means more and better illumination . . . nearest to natural daylight. It's vital, too, from a maintenance viewpoint, because a quick "once-over" with a damp cloth leaves the reflector surface as brilliantly bright as the day it left the firing ovens.

For all the facts on SILV-A-KING fluorescent units ask for a copy of Bulletin #45FS.

RLM

HOME OF

SILV-A-KING *Lighting equipment*

BRIGHT LIGHT REFLECTOR CO., INC. • Fairfield and State — Bridgeport 5, Conn.

through a cotton breaker-drawing frame, a finisher-drawing frame, a long-draft roving frame, and a long-draft ring spinning frame.

On this system (for which the name "American" has been proposed), 16 operators can produce approximately 300 lb. of 24s worsted yarn per hour; whereas, on the Bradford system 26 operators are required in order to produce the same amount of equivalent yarn.

Harsh Feel of Socks Due to Scouring Agent

Technical Editor:

How can we overcome the harsh feeling that is frequently imparted to all-wool socks during scouring and finishing operations? (9127)

The harsh feeling imparted to wool socks during scouring and finishing may be caused by too high temperature and too much alkali in scouring. A combination of high temperature and alkaline scouring materials, such as soap and alkali, will harshen wool. Why not try scouring with a neutral synthetic detergent and bicarbonate of soda? This combination is an excellent cleaning agent, and it has none of the bad features of hot, strong alkaline scouring agents.

Lightweight Fabric Gives Trouble in Fulling

Technical Editor:

We are having trouble in fulling a lightweight jersey fabric running from 6 to 9 oz. per yd. We are getting a lot of cracks or mill wrinkles in this cloth and are wondering if there is not some way to avoid them.

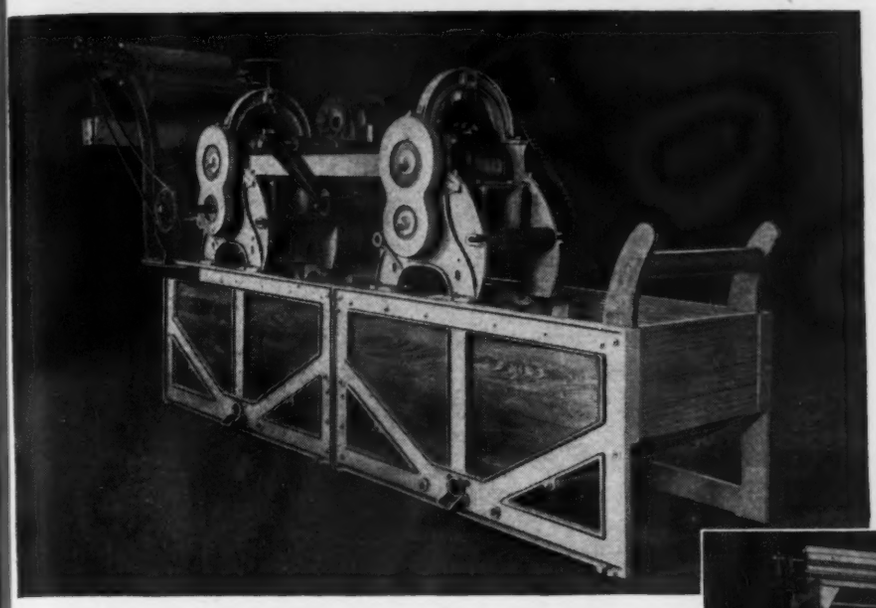
We seem to have, in feeding the cloth through the eye to the roll, a lap-over around the edge of the roll which apparently causes these creases. However, the defects may be caused by the cloth catching around or between a V-shaped guide that we have running from the eyelets to the rolls.

Would the eyelets being too large make any difference?

Our mill is one that we built ourselves for experimenting on fulling this type of merchandise. We intend to get a regular fulling mill as soon as one is procurable; but in the meantime, we would like to use the one we have. It is made as similar to a fulling mill as we can make one by looking at it.

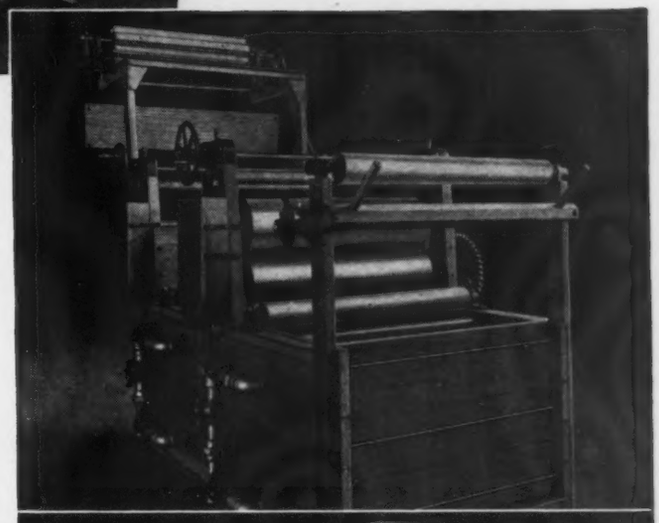
We are using only pure water for wetting out this light fabric and are not using any fulling solution. The goods are already dyed with an acid color. You may have something in mind along the line of an acid chemical that would do the fulling instead of soap, which would disturb the color if used on these dyed fabrics. (9124)

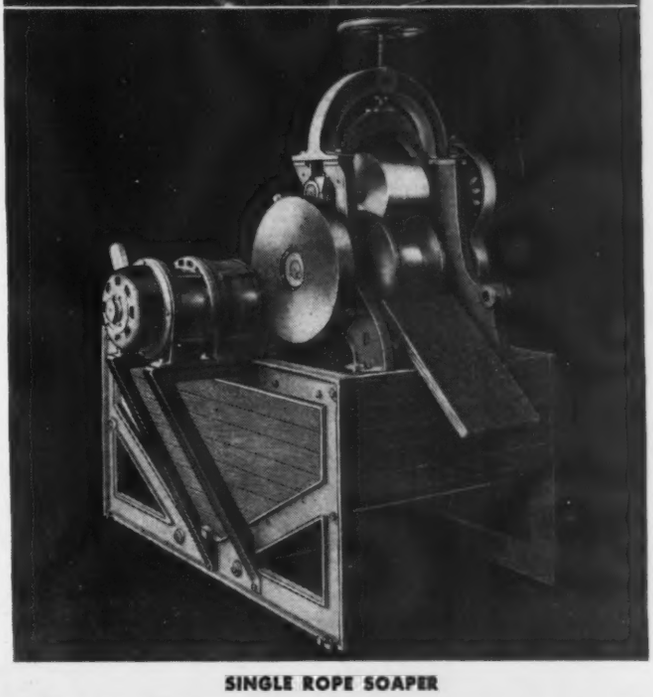
Apparently the eyelet through which the cloth is fed into the roll is too



◀ MODEL C HIGH PRODUCTION SOAPER

TANDEM ROPE SOAPER ▼





SINGLE ROPE SOAPER

There is a *Hunter Soaper* for any production requirement

The Hunter Model C High Production Soaping Unit has a main tank of 3″ cypress, 42″ wide x 3′ deep x approximately 9′ long. It is equipped with two sets of pressure rolls, one 36″ face, the second set somewhat narrower. Machine is equipped with slotted partition inside of tank to permit counterflow of soap and is equipped with all necessary spreader bars, carrier rolls and folding device. It is driven through 5 H.P. motor and speed reducer.

The Hunter Tandem Rope Soaper is designed for mills whose productive requirements are slightly less. This machine is made with sturdy cast iron frames and two cypress tanks. Top and bottom pressure rolls are furnished in two sets and are fabricated from cast iron. Top roll pressure is through springs and handwheels and the idler rolls are wood. Machine is driven through two speed reducers, a variable speed and two 2 H.P. motors. Machine may or may not be equipped with Folder as customer desires.

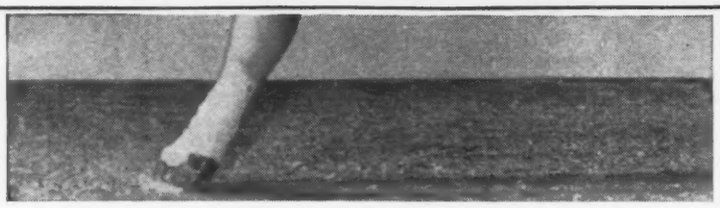
The Single Hunter Rope Soaper is capable of accommodating approximately six to ten Rotary Fulling Mills. Tank proper is constructed from tongued and grooved lumber designed for wet work. Main rolls are cast iron, top and bottom, and roll pressure is through handwheels and springs. The carrier rolls are made of wood and the machine may or may not be equipped with Folder as desired. Main drive is through 2 H.P. front gear motor or through a pulley reducer.

JAMES **HUNTER** MACHINE CO.

NORTH ADAMS, MASSACHUSETTS, U.S.A.

FOUNDED 1847

FIGURE



Of course, every manufacturer figures how to get the most production at the lowest cost from his belting. And, when the figures get down to belt dressing, the answer is CANTOL BELT WAX every time.

CANTOL is a belt treatment and preservative. A small amount, applied while belts are in motion, will eliminate static and slippage, sustain smooth power; increase belt life, production and profit.

Cantol Belt Wax is a product of

CANTOL WAX COMPANY

Bloomington, Indiana

Sold in every state through distributors and dealers

Cantol

FROM OLD MEXICO comes Candelilla Wax. Properly combined and rightly blended with other ingredients, it becomes CANTOL, the different and better belt dressing.

large if it permits the cloth to lap over the edge of the roll, or else the roll is too narrow. There should be no opportunity for the cloth to run over the edge of the roll so much that it may cause cracks or wrinkles. However, a more important reason for not permitting this condition to occur is that the cloth not passing through the nip of the roll will receive less physical action and perhaps somewhat less cover than the portion which is acted upon by the roll nip.

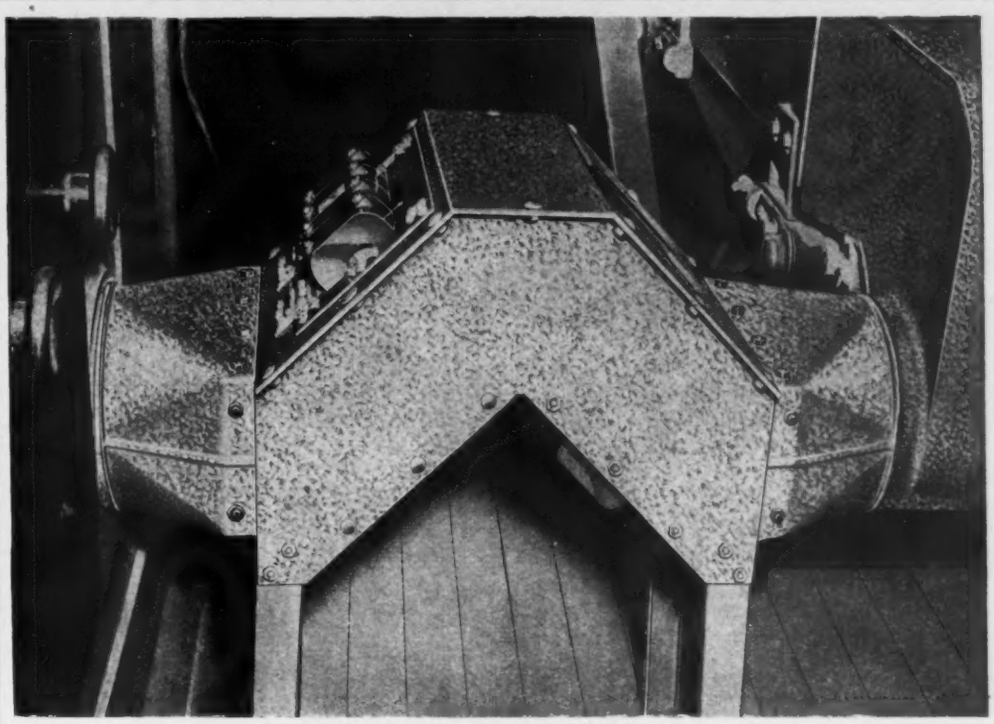
Lightweight pieces are probably much more subject to cracks and folds than heavier-weight, closely woven or closely knit goods, because the latter are not so apt to flatten down quickly and pack into folds which remain unchanged as the goods move through the mill. If the goods are not too open and porous, they may be "tacked" (that is, the selvages stitched together) so that the piece forms a long tube. Tacking will cause the piece to balloon as it runs and thus minimize the tendency which a flat piece has of running in the same folds all the time.

If the goods persist in running flat and in folds, it may be necessary to pull the pieces out every few minutes —that is, a few yards at a time— spread them, and shake them out to change the position of the folds.

The use of soap would give a better cushion than the use of pure water; but since the goods are dyed with acid colors, the use of soap is, of course, out of the question.

However, there are two possibilities which might be helpful in this direction. First, it would be possible to use some synthetic detergent with the water, such as Naoanol N R of National Aniline Co., Igepont of General Dyestuffs Corp., or Gardinol of Du Pont to give a bit of lubrication and a cushion to the pieces. Second, the use of acid, either sulphuric or formic, in the water—alone or with some nonionic synthetic like Ipepal C T A of General Dyestuffs Corp. or Triton N E of Rohm & Haas—would be entirely satisfactory for acid piece-dyed goods.

Do not allow the pieces to become too warm in the fulling mill. It may be necessary to keep all of the doors open, particularly in warm weather, in order to keep the temperature below 100° F. or preferably around 90° F. That should be the temperature of the cloth itself while running. Do not permit the pieces to become too dry. There should be enough moisture in them so that when the machine is stopped and a few inches of the fabric is wrung out by twisting between the hands, there will be a trace of moisture beads squeezed out on the surface.



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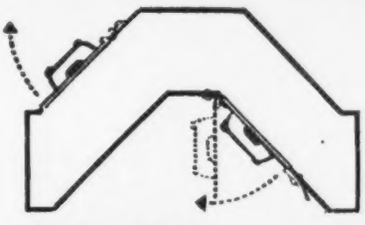
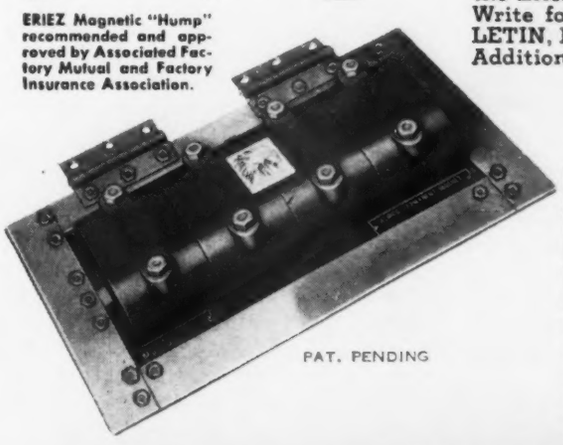


ERIEZ Magnetic "Hump" recommended and approved by Associated Factory Mutual and Factory Insurance Association.



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Eriez Hinged Type Fig. 4 Magnet.

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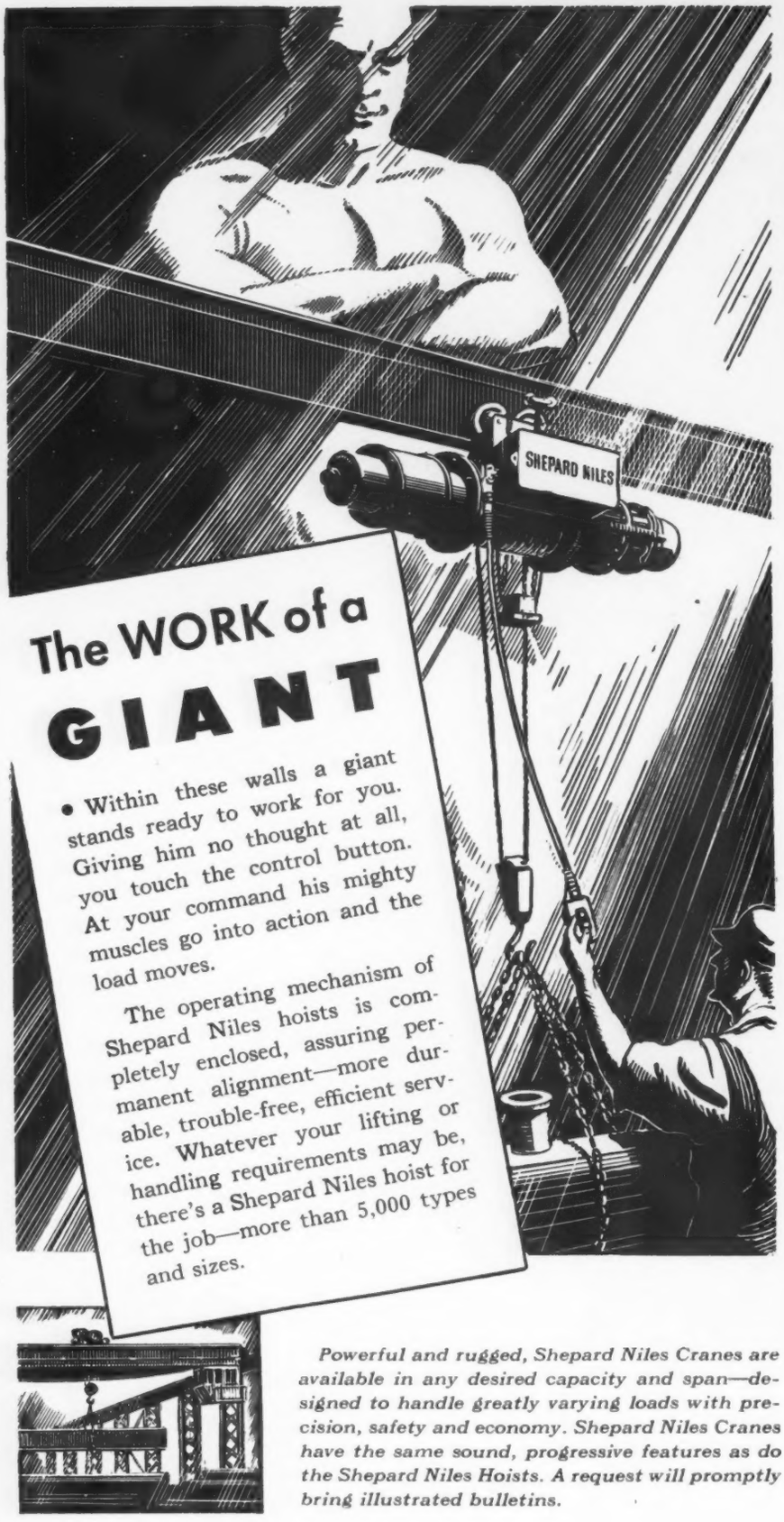

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Correct Roll Setting

(*Continued from page 123*)

ing the best setting for a particular staple.

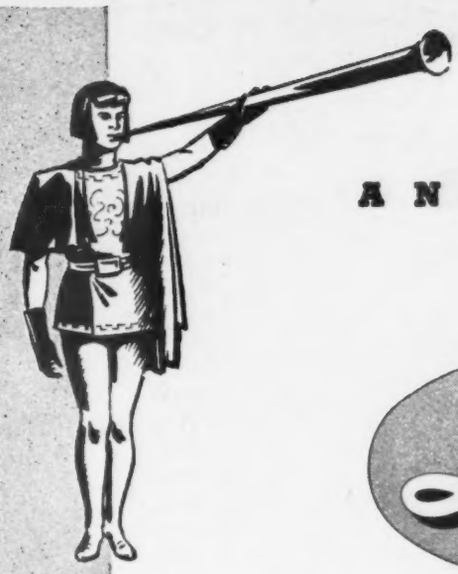
Middle-to-back roll settings on roving frames have generally been treated as a matter of little importance. Some neglect was permissible in the days of break drafts of 1.04; but with the modern trend toward increased break drafts on long-draft roving, control of fibers is important and a wide setting should be avoided.

A harsh, wiry cotton will often require a wider setting than a soft-fibered cotton. A relatively heavy strand of fibers demands wide settings because bulk increases the effective widths of roll bites. Increased draft, higher roll speeds, larger roll diameters, soft-cushion top rolls, increased weight on top rolls, and increased humidity all require wider settings.

VARIABLES. Many mill men are of the opinion that little benefit is gained by determining and obtaining precise roll settings. They cite two main reasons for this claim. First, there are too many variable factors involved, such as length of staple, humidity, weight of strand, and diameter of buffed rolls. Second, precise roll settings are not necessary to maintain yarn strength, low end-breakage, and a good-quality product, since the best settings are those which are wide enough for all reasonable variations without periodical epidemics of hard ends or loss of yarn strength.

Results of tests (Fig. 4) made on the same frames with the same stock indicate that little benefit is gained by precise roll settings. In these tests, settings of rolls were increased on each process 1/16 in. for each successive test. The range was from test No. 1, considered an ideal setting, to test No. 4, in which the end breakage indicated that the setting was too wide for even work. The best results for both yarn strength and end breakage were obtained in test No. 3 on settings which many mill men would think were too wide for effective drafting. What is most significant in these tests is that the first three settings gave almost equally good results with such a difference in roll settings. This fact seems to prove the contention that roll settings are not too critical, providing that they are wide enough.

DETERMINATOR. The H & B Roll Spacing Determinator is a mechanical testing device for accurately indicating the correct front-to-second roll settings on drawing, roving, and spinning frames. Consideration is given to



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OUT OUR WAY

DO YOU REALIZE WHAT IT WOULD HAVE COST TH' COMPANY IF WE HADN'T USED SOL-SPEEDI-DRI?
LOOK AT IT! THERE IT IS, IN BLACK AND WHITE! THE DUMBEST GUYS IN THE MILL CAN SEE THAT SOL-SPEEDI-DRI SAVES MONEY! LOOK HOW PRODUCTION EFFICIENCY HAS PICKED UP SINCE WE STARTED USIN' SOL-SPEEDI-DRI ON TH' FLOORS.
LOOK AT 'EM RUBBIN' IT IN! YOU'D THINK THEY CLEANED UP ALL THAT GREASE AND OIL WITH THEIR NECKTIES INSTEAD OF SOL-SPEEDI-DRI! THEY'VE BEEN SMART AN' NOW THEY'RE CROWIN!
HARMONY AIN'T SO GOOD--IT'S WHEN ONE GUY WORKS HIS HEAD OFF TO SHOW UP TH' OTHERS THAT YOU REALLY GET RESULTS!
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IN TEXTILE MILLS, where floor-cleanliness is essential, SOL-SPEEDI-DRI is doubly effective. SOL-SPEEDI-DRI reduces the danger of staining fine fabrics with oil and grease . . . and it keeps floors safe for walking, safe for working.

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REPUTATION
Many of the largest textile mills in the industry use SOL-SPEEDI-DRI. Names on request.

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OIL AND GREASE ABSORBENT

length of staple, cotton character, drafts, thickness of strand, and weight on rolls. The processed strand slides down a sloping scanning board at the front of the machine to permit a close inspection for evenness of drafting.

On a close roll setting, shown in Fig. 5, the long fibers in the strand marked 7 are held simultaneously by the bites of front rolls *1* and *I* and second rolls 2 and *II*. Due to the greater speed of the front rolls, these long fibers will be stretched and many will be broken. However, they form only a small part of the total fibers in the strand, and the fiber breakage cannot be detected on the inspection board.

If lever *B* is raised as shown in Fig. 6, the upward bending of the strand increases the number of fibers held back and causes a wave or curl to appear in the strand on the inspection board. Roll settings can be changed while the machine is running until a setting is obtained which delivers a smooth, even strand without wave or curl. The settings thus indicated are the closest that can be run without danger of fiber breakage.

ROLL-SETTING METHODS. An effective rule-of-thumb method, similar in application to the principle of the more accurate Roll Spacing Determinator, for detecting fiber pinching consists of pressing a thin steel rule down on the fiber strand between the front and second rolls while the frame is stopped. If strong resistance to this pressure prevents strands from slipping inside the bite of either set of rolls, the setting is too close. The setting is increased in 1/32-in. increments until slippage of strand between the bites is obtained with slight pressure on the steel rule.

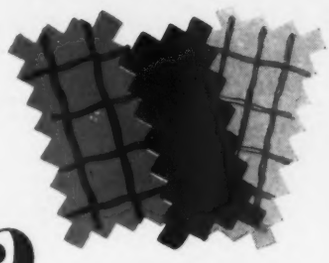
Attempts to measure steel-roll settings center to center often give uncertain results. The best method for determining these settings is to add the diameters of the steel rolls together, divide this sum by two, and to this result add the thickness of the leaf gage that can be inserted between the bosses of the rolls, as: $1\frac{1}{4}$ in. dia. front roll + 1 in. dia. middle roll = $2\frac{1}{4}$ in. Dividing by 2 gives $1\frac{1}{8}$ in. Adding $\frac{1}{16}$ in. gage gives center-to-center setting of $1\frac{3}{16}$ in. (This method can also be used to determine leaf gage to be used for any desired setting.)

It is advisable to set top rolls $\frac{1}{32}$ in. forward of center on steel rolls instead of directly over center. This overhang prevents rocking of the top rolls when the frame is stopped and started.

CARBON-PAPER METHOD. The best method for obtaining the actual distance between contact of top and

ARMCO STAINLESS gives you the "BIG 7"

1 NO RUST



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Equipment made of ARMCO Stainless Steels gives you seven important manufacturing and selling advantages. Summed up, this rustless equipment helps cut production costs and makes it easier to produce fabrics and yarns that have consistently true colors.

Let us show you how production and profits go up the "ARMCO Stainless Way." Just get in touch with your equipment fabricator, or write us. The American Rolling Mill Co., 4331 Curtis St., Middletown, Ohio.

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MEANS MORE STEEL
We urge you to collect every pound of iron and steel scrap, including unused and obsolete equipment. Speed it to the steel industry through your regular channels. Present high production cannot be maintained unless more scrap is shipped to the mills promptly. The situation is critical.
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LUBRIPLATE maintains a durable, load carrying film at the "Friction Point," which reduces friction, retards progressive wear and prevents rust and corrosion. That is why gears lubricated with LUBRIPLATE last longer and run better. Don't take our word for it. Prove it to yourself. Thousands have in every industry.

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Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE far out in front of conventional lubricants.

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While gear types may vary to meet different conditions, there are constants that apply to all speed changes. The amount of power consumed and the wear on gears is directly dependent upon the relative smoothness of the operation of the gears. Pitted, scored, galled, rusted, corroded, or extremely worn gear teeth will naturally set up an excessive power drag and consequently effect a substantial increase in power costs. Gear failures necessitate the shutting down of machinery, with time loss during stoppages, and expensive gear replacements. Many gear failures can be attributed to misjudgement in selecting the proper type lubricant, or the inability of the lubricant selected to successfully cope with the requirements of the particular gears and the operating conditions involved.

A durable, load carrying, water and acid-resistant lubricating film must be maintained on gear teeth at all times to assure smooth and continuous operation with a minimum of power consumption. That lubricating film must stand the test continuously at the Friction Point —where the gear set meshes—the point that meets the full force of loads carried—the point where the shocks and thrusts of speed changes are squarely centered. LUBRIPLATE Lubricants have provided the solution to hundreds of both exposed and enclosed gear troubles. LUBRIPLATE has not only kept new gears looking new after thousands of hours of continuous operation but has permitted the re-use of old and worn gears that were about to be replaced.

LUBRIPLATE Lubricants possess that comparatively light body with exceptionally high film strength. LUBRIPLATE has special stay-put properties, protects against rust and corrosion and will not break its film when subjected to excessively heavy loads. Plant managers have not only been able to prolong the life of their gears many times over, but also have been able to realize substantial savings in power transmission costs with the continued use of LUBRIPLATE.

The "LUBRIPLATE SERVICE HANDBOOK" containing valuable information on the subject of lubrication will be furnished without charge by writing Fiske Brothers Refining Company, Newark 5, New Jersey. Adv.

bottom rolls is as follows: Remove top rolls and strand from the bosses to be measured. Place a strip of carbon paper 1 in. wide on steel rolls with the carbon side up. This strip of paper should be long enough to reach all rolls. Place on carbon paper a narrow strip of white paper. Replace top rolls, weight them in operating position, and tap the rolls on top. Remove the top rolls and strips of paper. The centers of impressed carbon lines will be the centers of bites between steel and top rolls. It must be remembered that heavy strands between rolls widen the bite on both sides of center, and this point must be considered when determining the required settings.

Leaf gages for insertion between steel rolls should be of brass or hardwood. Jammed flutes will often result from using steel gages. A one-piece gage of the required thickness, plainly marked, is preferable to multiple leaves built up to the required thickness. Many errors in selecting the proper number of leaves for a desired setting can thus be avoided, since the spring between adjacent leaves is often sufficient to give incorrect or irregular settings.

Woolen Card Clothing

(*Continued from page 131*)

terioration will be rapid, the wire will soon become uneven in pitch and generally unsatisfactory for the making of quality yarns. An experienced, observant carder can tell instantly the acceptability of a fresh shipment of clothing, and usually an inspection of one end of the fillet is sufficient.

Though clothing is not cheap and its cost is an item which looms large in the minds of the management, there should be no stinting—no "penny wise, pound foolish" policy. The shrewd manufacturer, once convinced of the large dividends received from money wisely spent on this vital element, will never again hesitate to invest in it. Rather, he will insist on a high state of efficiency of the card wire.

A wise motorist knows that a set of worn out tires will not stand the strain of driving at seventy miles per hour. Likewise, an experienced carding overseer knows he cannot get top production of quality yarn with card clothing that has been in service too long. The two expressions "top production" and "efficient card clothing" are synonymous, inseparable, full-time partners, each being dependent on the other.

MAINTAIN EFFICIENCY OF 85%. Generally speaking, the depreciation of

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When cotton is picked and sent to us . . . from there on in its OUR Story. Because it is Boger and Crawford that process this cotton into knitting yarn having that all-important feature . . . Vitamin Q, "Quality". The process of insuring this *extra* Quality in our knitting yarn is expensive to us, but from users' reports it is well worth our effort. Knitting yarn is poor without Quality. So, in selecting your yarn, look for Vitamin Q—"Quality". Every inch of Boger and Crawford yarn is steeped with Vitamin "Q".

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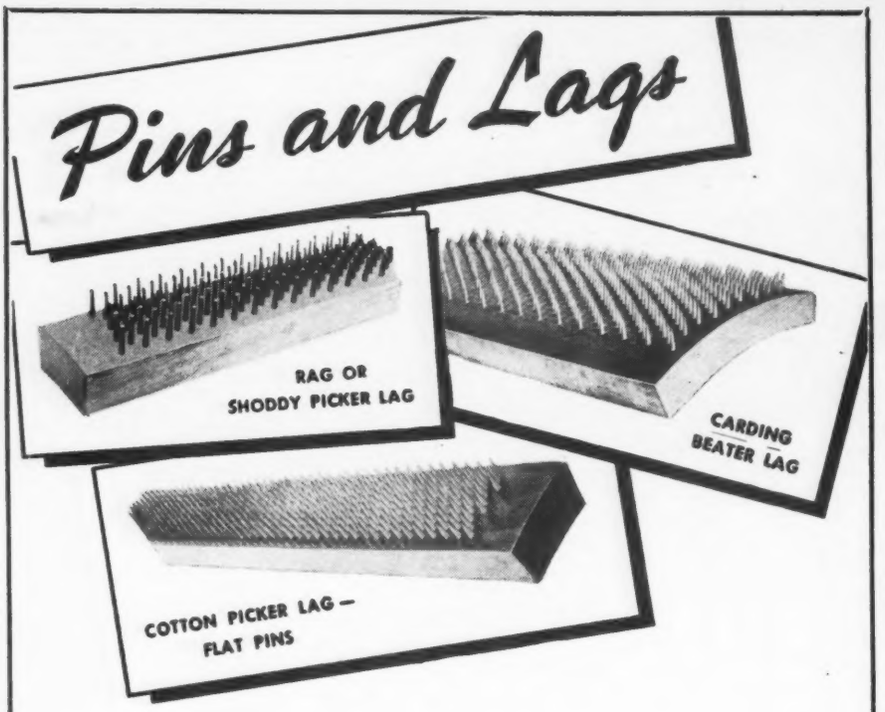

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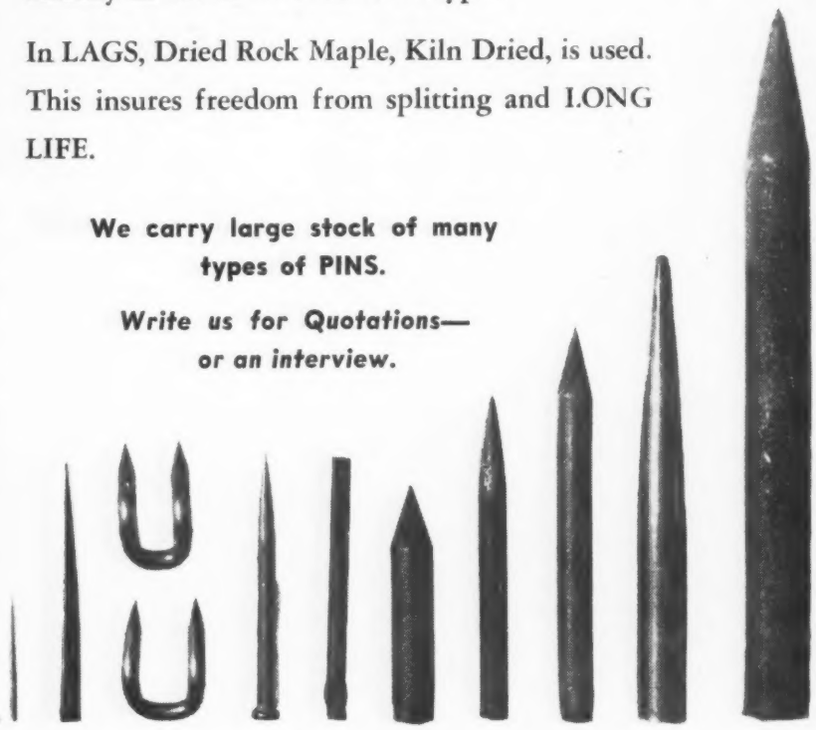

WILLIAM CRABB & CO.

301 THIRD AVENUE, NEWARK, N. J.

card wire in a woolen card is very rapid, depending largely on the nature of the stock and size of yarn being made. The time element, or length of service, should be discounted in favor of the poundage of stock going through the card. The final decision of making replacements should be made by an experienced supervisor, based on the actual condition and performance of the clothing. Taking a newly clothed card as 100% efficient, it is the overseer's duty to maintain an efficiency of 85% or better.

The constant hammering of stock passing over and against the points, and the continuous vibration of the wire, takes its toll of the clothing. The foundation becomes impaired and the wire loses some of its pitch. Even when the wire is not appreciably worn in length, much of the combing action is lost if the pitch of the wire has deteriorated.

Frequently, when this condition is especially bad, the action of the wire has a completely wrong effect on the fibers, imparting a rolling action which forms many pills, especially if the stock is short and fine. Grinding the wire temporarily corrects and improves the pitch, but it is not a permanent cure.

No positive opinion or statement can be safely made as to the exact time when card clothing ceases to be economically useful and should be discarded. The first breaker, which takes the brunt of opening and combing the fibers, naturally will need more grinding and have to be reclothed more often than the finisher card. This is a matter for expert supervision. As a general rule—but of course depending on the nature of the stock—300,000 to 400,000 lb. production warrants some replacement on the first breaker. The finisher card might handle twice the above amount with economy.

LARGE SAVINGS POSSIBLE. When clothing is in poor condition, the savings that can be made by the judicious use of new wire are impressive. Take, for example, the following case: Taking off 35 lb. of roving per hour, a mill was working a 120-hr. week, 50 weeks a year, so that the annual production per card after deducting 10% lost time was 189,000 lb. Not satisfied with production, the overseer reclothed a cylinder here, a doffer or fancy there, and several workers, at a total expenditure of $1,800 for materials. On resuming production, the yarn test was so high that it was possible to increase production of the card 30%, to approximately 45 lb. per hour, automatically decreasing costs on that particular operation. The annual production after deducting

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10% lost time was now 243,000 lb. Further, the superintendent found, by running a trial lot on this re-vitalized card, that the cost of the blends could be reduced 3¢ lb. without impairing the yarn test or the feel and handle of the fabric. This alone meant an annual saving of $7,290. Other gains, intangible in nature, such as improved spinning and weaving, cannot be measured in dollar value.

What other investment would pay such returns? The possibilities for savings in woolen carding would seem to be limited only by the skill and diligence of the overseer, plus a wise investment in sufficient clothing to maintain production at the highest possible level compatible with quality yarns. It is not so hard to build up a group of cards to the highest point of effective operation. The difficult part of sustaining this condition indefinitely is what taxes the ability of the most skillful carder.

As another example, take the case of a manufacturer who established a branch factory and started production with new carding machines, equipped with new clothing throughout. For some time the results were most gratifying, with top production of good yarn, and low shrinkage and labor cost. After eight months to a year of three-shift operation, troubles gradually developed, yarn tests dropped, breakage in the spinning increased, and unevenness in size of yarns showed in the finished cloth, causing many rejections.

No change had been made in the stock. What had happened?

The efficiency of the card wire had been reduced to a point where top results could no longer be obtained.

The proper remedy for this condition was replacement of the clothing, where necessary. This does not mean complete re-newing, but does mean replacement of clothing on vital points, where necessary. Clothing does not wear out uniformly. Some parts, such as the cylinders, which are most active, show deterioration sooner than less active rolls.

CHECK AT CHANGES. Another case in point is that of a large corporation which found its blanket mill unprofitable, and so changed over a large part of the plant to the manufacture of high-grade woolens. A large sum was spent for the installation of tape condensers, but little attention was given to replacing card clothing that was not in good condition or suitable in size for making the new fabrics. Great difficulty was had in producing satisfactory yarns. There was a resultant high percentage of seconds—too high for the margin of profit. Finally,

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by BAHNSON

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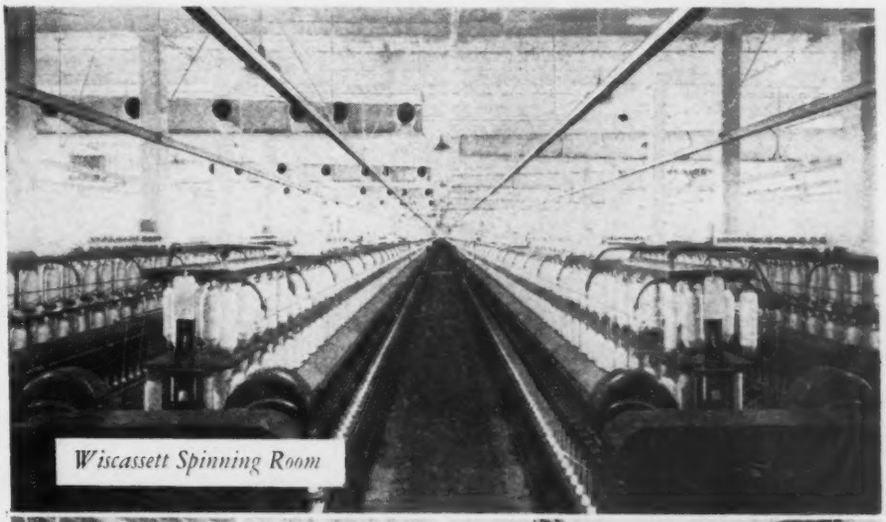
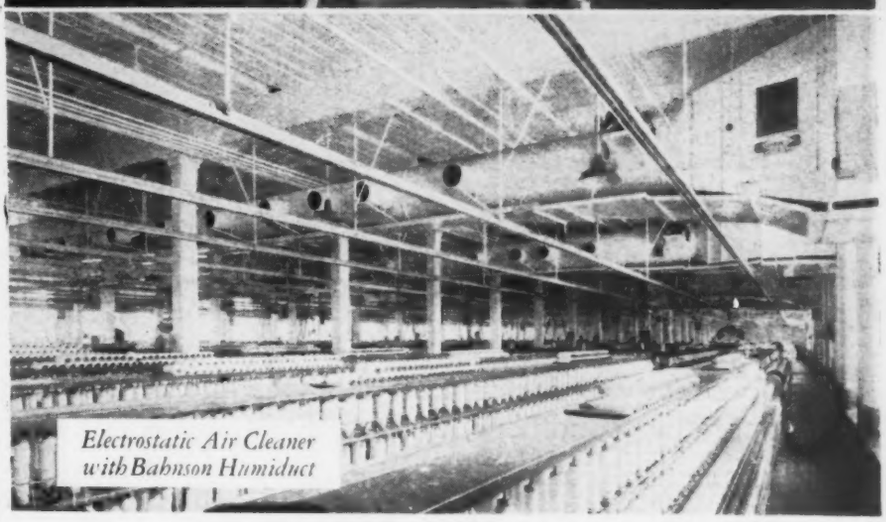
WISCASSETT MILLS COMPANY, Albemarle, N. C., is recognized as a producer of quality cotton yarns—through unexcelled production methods that obtain superiority even with the high standards that exist today in the textile field.



Wiscassett Spinning Room



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To meet the rigid specifications required for the efficient production of highest quality yarns Bahnson has engineered this "Humiduct" System to combine accurate humidity and temperature control with electrostatic air cleaning.

The Bahnson Humiduct is a unit system of air conditioning for humidifying, cooling, heating, ventilating, filtering and dehumidifying in any desired combination.

Bahnson System
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THE BAHNSON CO. WINSTON-SALEM, N. C.

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Displayed in Operation

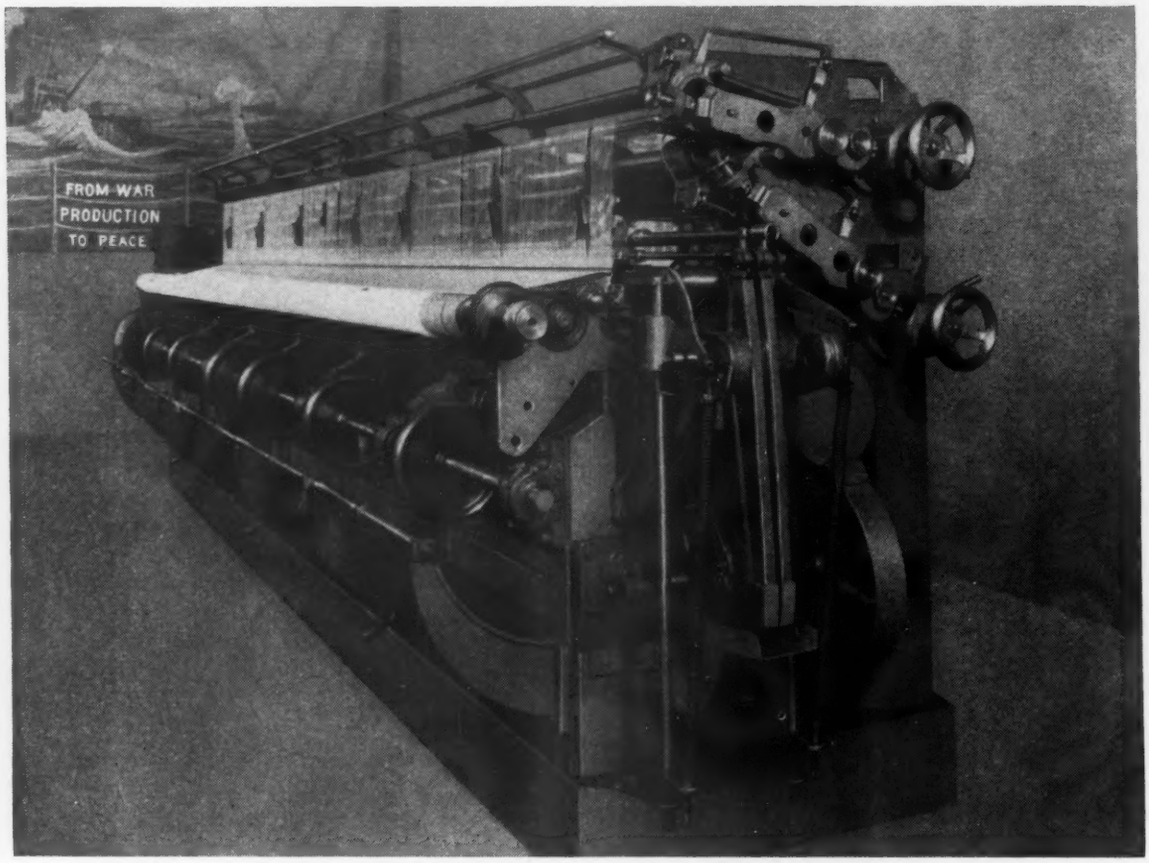

Photo shows one bar—next month two bars in operation.

Ready for Action!

Under development since before the war, L. Robaczynski and associates are now ready to demonstrate this versatile high speed tricot machine under mill operating conditions, at their modern plant in Brooklyn.

Its massive construction eliminates vibration and minimizes wear and tear and replacement parts. From its heavy base to its takeoff it incorporates many unusual developments — a design that will assure bigger production over a long and carefree life.

Robaczynski's Tricot is capable of speeds in excess of 500 courses per minute; accommodates 21 inch beams or any other standard size. Of course, it's a two bar 26 gage machine in a 180 inch width. In the long run the Robaczynski will pay you well. See it! Now on display and in operation at our plant.

ROBACZYNSKI
MACHINE CORPORATION
PURL STITCH (Links and Links) and FLAT KNITTING MACHINES

340 Ten Eyck St. Brooklyn, N. Y.

Home Furnishings are sold by the millions of yards and dollars

THE BUSINESS of making the American home attractive is a year-round business of tremendous volume in the textile industry. It is approximately three times the size of electrical appliances, for example. The country's annual expenditure for draperies, curtains and upholstery fabrics is over a hundred-million dollars at retail. When companion necessities such as floor coverings, bedspreads, shower curtains and slip-covers are added, the total runs well over a half-billion dollars. *These statistics, taken from U.S. Department of Commerce reports for 1939, are the latest official figures available. Informed estimates of current volume are substantially larger.*

The home furnishings industry requires a variety of textiles to meet many special needs—ranging from heavy, resilient fibres for rugs to fine yarns for sheer curtains. This is one of the reasons Celanese Corporation of America, with its wide range of synthetic textiles, is such an important source of supply for the industry. The modern synthetic fibres pioneered by Celanese have distinctive properties which make them highly adaptable. Celanese* yarn has a high degree of dimensional stability in its resistance to shrinking. Because of this quality, curtains made of Celanese yarn, whether a sheer glass curtain or thick, luxurious draperies, are aided in retaining their true length. Another important advantage is that Celanese yarn is mildew-resistant and moth-proof.

In addition to its widespread use in all-Celanese fabrics, Celanese yarn is also extensively employed in combination with other fibres. Wool, cotton and viscose process rayon are blended with Celanese yarn to produce a wide variety of combination fabrics. Yarns spun from Celanese staple fibre are also of great importance in producing home furnishings ranging from rugs and blankets to spreads and draperies.

Thanks to the great utility and versatility of modern synthetics, the operations of Celanese Corporation extend throughout the textile industry—from household to apparel to industrial uses. Added to textiles is the company's production of plastics and chemicals . . . with a broad program of integrated research in these three related fields of modern synthetics. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

*Reg. U. S. Pat. Off.

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Celanese*

TEXTILES . . . PLASTICS . . . CHEMICALS

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Prompt Shipment . . .

Eleven Ryerson plants provide convenient stocks of Allegheny Stainless—bars, plates, sheets, strip, seamless and welded tubing and pipe, pipe fittings, welding flanges, welding rod, etc. Stocks are unbalanced from a size standpoint because of the great demand and deliveries not as fast as usual, but you can count on prompt shipment of most requirements. The uniform, high quality of Allegheny Stainless plus the expert counsel of Ryerson metallurgists make this the practical source for stainless from stock. Call, wire or write—

JOSEPH T. RYERSON & SON, INC., Steel-Service Plants at: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston, Los Angeles.

OTHER PRODUCTS:	
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RYERSON STEEL

KNOW AND PLAN WITH PQ SILICATES

The catalog of PQ Silicates of Soda includes liquids, solids and powders, which range from $3Na_2O,2SiO_2$ to $Na_2O,3.9SiO_2$. This variety is worth remembering because of the properties valuable to textile processing.

For instance, sodium metasilicate. Have you the facts of its detergent qualities! Bulletin No. 466, mailed free on request, brings them to you. Here are two textile uses:

KIER BOILING: Metso improves mote removal and produces whiter goods.

RAYON SCOURING: Metso solutions effectively emulsify grease and oil, insuring more goods with "A" ratings.

Make use of PQ's Silicate of Soda information service. It's a time and money saver.

PQ SILICATES OF SODA **metso**

PHILADELPHIA QUARTZ CO. • Dept. A. 127 S. Third St., Phila. 6

an expert carder, a specialist on fine yarns, was engaged. After making a survey of the card wire, he recommended many changes and replacements, all of which were made. Within a few months, under able supervision of the new overseer, fine yarns of above standard strength were being produced and woven into a fabric acceptable to the trade.

These are only several of the many similar experiences observed by the writer over a period of years.

The installation of tape condensers for making fine yarns is very advantageous from a standpoint of increased production and uniformity of size. However, in the making of high grade fabrics, tapes alone cannot produce the desired results. The proper clothing for the job, maintained at a high standard, is essential to successful operation.

During the war, there was no competition in the textile industry, and there still is much less than in normal times. When competition returns—which it surely will, with higher wages and salaries, and with higher prices of supplies and raw materials—more and closer attention must be given to technical and machine efficiency if costs are to be kept at a reasonable and competitive level. Those mills best equipped and supervised will be one jump ahead of competitors in the fierce race for orders that will develop in the future.

Spin for Quality

(*Continued from page 147*)

ation. Old employees taught the new follow-up with the left hand saved one spinning room over $2,000 per year, but the saving was considered nominal in view of the better cleaning and housekeeping which resulted. When the follow-up motion became habitual with the spinners, the smooth bosses of the steel roll were kept clean at all times.

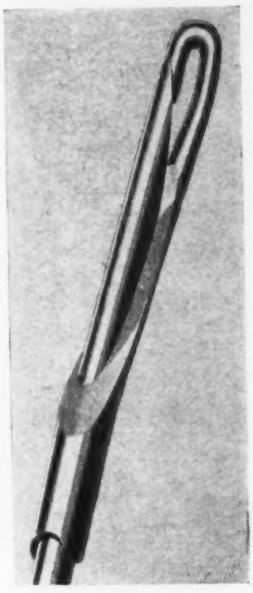
The scavenger roll is not included in the mock-up, since its cleaning cannot be demonstrated outside of the spinning room itself. The use of plush-covered rolls, however, is said by some overseers to have improved the technique of scavenger-roll cleaning. The rolls are constructed with hard center rings so that the rolls must be stripped from the center to each end with one short stroke of each hand rather than with one long stroke of the right hand. The two short strokes are said to be faster than the one long motion, and the plush cover itself permits the waste to slide more easily than do other types of covers.

SPINNER TESTING. Any program designed to develop quality spinners can-

RAYON REPORTS

Prepared Monthly by American Viscose Corporation, New York, N. Y. SEPTEMBER, 1946

AMERICAN VISCOSE SOLE SALES AGENTS FOR F.N.F.'s NEW KNITTING MACHINE



Details of the tubular needle, heart of the new F.N.F. Tricot Knitting Machine, are shown here.

Concurrent with the appointment of American Viscose Corporation as sole U.S. Sales Agency for F.N.F., Ltd., of London, England, the two companies have jointly announced the new F.N.F. high speed, tricot knitting machine, which easily knits at a "cruising speed" of 1,000 courses of 84 inch wide fabric per minute.

The machine, featuring such improvements as a newly designed compound tubular needle, will be on display, with many of the fine fabrics it produces, at the Textile Research Department of American Viscose, Marcus Hook, Pa., from October 10th to November 22nd.

To give visitors the fullest possible attention of the company's technical staff, appointments are being arranged in advance. Knitwear and other interested manufacturers are requested to write, suggesting a convenient date, to American Viscose Corporation, F.N.F. Sales Agents, 350 Fifth Avenue, New York 1, N. Y.

Among the outstanding improvements listed for the machine is its freedom from vibration or clatter, even at high speeds. It stops automatically if a single thread breaks, and its positive, electrically controlled warp let-off delivers yarn supplies continuously, without any supervision.

Heart of the new F.N.F. machine is its small tubular needle which, when closed, easily accommodates an aggregate of 300 denier or equivalent count. The hook-closing member of the sturdy beardless and latchless needle requires no adjustment. Smooth needle action is provided by double eccentrics.

Rayon and wool blended yarns being woven on a velvet type carpet loom, one of the practically complete line of full size textile machines on which research work is conducted at the Textile Research Department of American Viscose Corporation, Marcus Hook, Pa.

NEW BOOKLET AVAILABLE— "SHORT STORY OF RAYON"

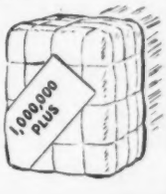
"Short Story of Rayon," a 32-page illustrated booklet, has just been published by American Viscose, from whom copies are available on request. The book tells the history and development of the man-made fiber and details rayon's vital place in the lives of everyone. Sections also cover methods of manufacture and the part played by research in developing new uses for rayon.

RAYON . . . 20 YEARS AGO

A prominent maker of women's sweaters attributes their recent big gain in popularity to rayon's attractive luster in trimming and designs.

An enthusiastic rayon producer feels safe to claim that there's no one on the streets today whose clothing does not contain some rayon.

U.S. production of more than a million bales of cotton linters in a year is double that of five years ago . . . largely thanks to expanding rayon manufacture.



"RAYON CARE CLINIC" BEING OFFERED TO WOMEN'S CLUBS

Over 10,000 women's clubs the country over are already enrolled to receive a new Rayon Care Clinic program, now in the last stages of preparation by the consumer relations section of American Viscose Corporation.

The material includes:

1. Easy-to-use Program Plan . . . A detailed, step-by-step plan tells program chairmen exactly how to proceed in planning and conducting the meeting. It is flexible and may be adapted to suit the needs of individual clubs.

2. Outlines for Member-Speakers . . . The programs• may be presented by the clubs' own member-speakers. Complete outlines of each topic are provided.

3. Scripts for demonstrations . . . Complete scripts and instructions are provided for three unusual "how-to-do-it" demonstrations.

4. Up-to-date Reference Material . . . All necessary reference material is provided—as well as large-size wall chart.

5. Leaflets for Members' use . . . Clubs are invited to order extra copies of reference leaflets for all members—free of charge.

Copies of this material are available to any reader of "Rayon Reports."

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

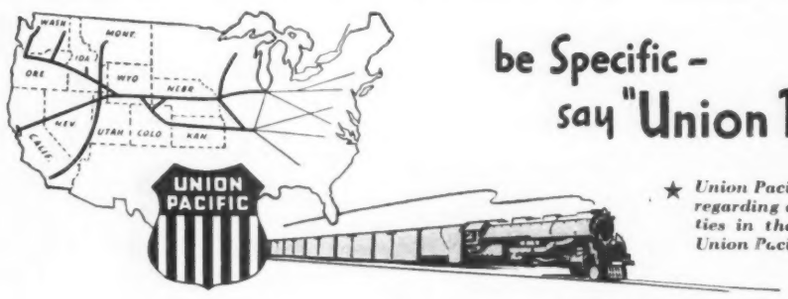
*Reg. U. S. Pat. Off.

ADV.

WITH the coming of the railroads, the western frontiers were conquered. They brought men, implements for building homes and towns, transportation for marketing products. Then factories were built. And industries thrived where railroads paved the way.

In the 13 great states served by Union Pacific, there still is land to be tilled, minerals to be unearthed, livestock to be raised, room for new homes and industrial expansion.

Union Pacific will continue to serve the territory it pioneered, by providing efficient, dependable, safe transportation for shippers over the time-saving Strategic Middle Route.



be Specific – say "Union Pacific"

★ *Union Pacific will gladly furnish confidential information regarding available industrial sites having trackage facilities in the territory it serves. Address Industrial Dept., Union Pacific Railroad, Omaha 2, Nebraska.*

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The Strategic Middle Route

QUALITY AND SERVICE

Rayonier brand names on dissolving wood pulps are recognized as the buyer's assurance of highest quality.

Believing that all products can be improved, Rayonier maintains a large central laboratory, staffed by experienced scientists who strive unceasingly to develop ever higher standards of quality.

Quality products and quality in customer service go hand-in-hand. We believe we can best serve our customers by collaborating with them on their individual problems. Our technical staff offers a quality service correlating research, development and control with the uses of our pulps.

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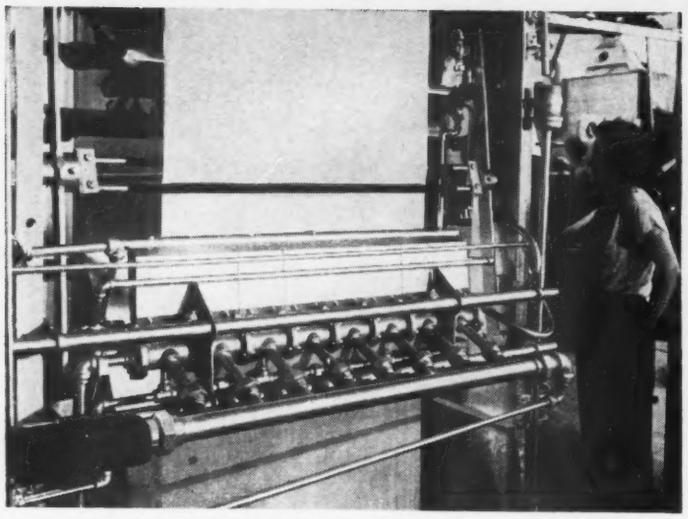
Sales and Executive Offices: 122 East 42nd Street, New York 17, N.Y.
Mills: Hoquiam, Port Angeles and Shelton, Wash., and Fernandina, Fla.



Automatic

CLOTH SINGEING MACHINE

- For use on synthetics, cotton or wool
- Speeds up to 375 yards per minute
- Engineered to your needs
- Fired with either oil or any gas
- Saves time and labor
- Rugged construction
- Highly efficient
- Full automatic operation

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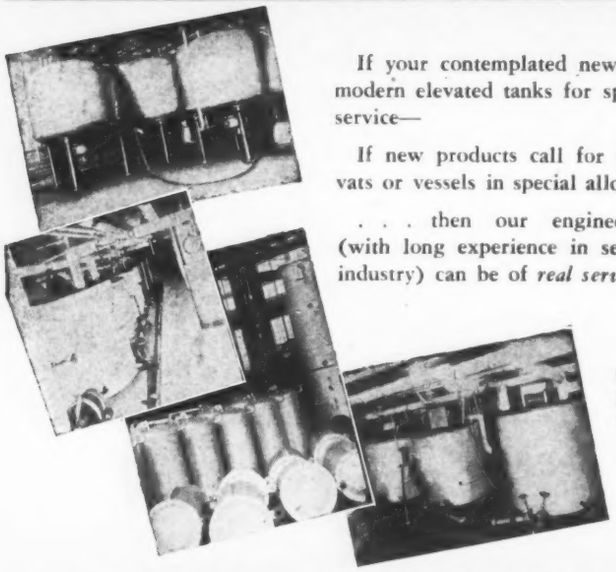
Combustion Engineers Serving the Textile Industry

INDUSTRIAL HEAT ENGINEERING COMPANY

709 WOODSIDE BLDG. • GREENVILLE, SOUTH CAROLINA

Is your mill planning

EXPANSION or MODERNIZATION?



If your contemplated new buildings require modern elevated tanks for sprinkler or general service—

If new products call for new kiers, kettles, vats or vessels in special alloy steels—

. . . then our engineering department, (with long experience in servicing the textile industry) can be of *real service* to you.

Submit us your problems, or write for a copy of "Tank Talk."

R.D. COLE MFG. CO. ESTABLISHED 1854

Newnan Ga.

not, of course, neglect spinner efficiency. As a means for gaging operator efficiency at the mock-up, the elapsed time for each stage of the piecing operation is posted in decimal minutes at the tops of the sketches. For example, the value of 0.02 min. listed in Fig. 5 is the amount of time elapsed at the moment the operator finds the loose end of yarn.

These values are based upon measurements of experienced operators; and with similar equipment for other tasks, a complete pre-employment testing routine could be developed for all spinning operations. What this would mean in terms of dollars and cents cannot be estimated, since there are no complete installations of textile pre-employment testing which can be used as bases for estimation. It is apparent, however, that proper employee selection would lessen the training-for-quality burden now carried by the overseer of spinning.

Dielectric Heating

(*Continued from page 141*)

inal drying, with the exception that less power is needed, since the rewet cakes contain only about 100% water.

DRYING SIZED NYLON. Tests which followed the return of nylon to the hosiery industry have revealed important applications for high-frequency power in this field. The most promising of these are the drying of the yarn on sizing tubes and setting twist. The time required to dry a sizing tube, which contains around 800 g. of single-ply 40-den. yarn, with around 24 g. water content, is 2½ to 3 min. The laboratory setup for this is shown in Fig. 4.

Test samples of yarn dried in this way have been coned and later knitted with excellent results. The high-frequency drying of these tubes greatly reduces the number of tubes in use and reduces handling costs proportionately. One conveyor installation is working on production with excellent results, and several more are to be installed immediately.

Twist setting has been coincident with the size drying in most cases. However, some tests were run in which the twist was set in small yarns wound on spools and on cones. These tests produced satisfactory running yarns; and if the twist setting of nylon wound in such packages is desirable, the process can undoubtedly be worked out.

SPECIAL APPLICATIONS. High-frequency applications to wool have centered around the twist-setting oper-

• **The latest development in textile softeners, equally suitable for use on cotton, linen, silk, wool, synthetic fibres and mixed fabrics. A full supple hand is given by Lupomin—laundering leaves the finish smooth, soft and silky.**

Economical-to-use Lupomin is available in all pHs, in both paste and powder forms, in chemical formulae to meet any fabric requirement—for the dyebeck, jig, quetch or padder. Your inquiry is cordially invited.

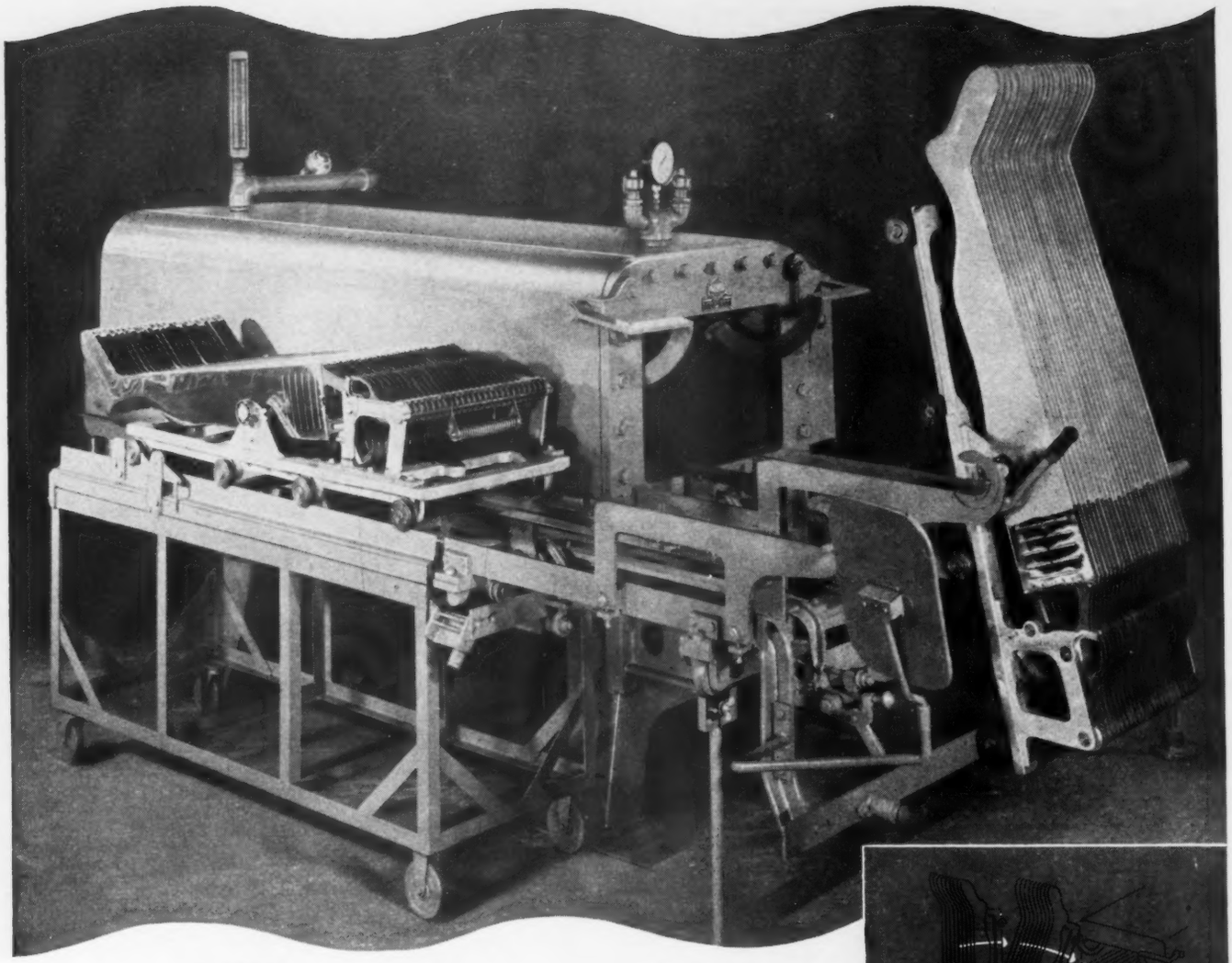
WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals **PASSAIC, N. J.**

OTHER PLANTS: CARLSTADT, N. J. • LOS ANGELES, CALIF.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Knoxville, Tenn.



Paramold

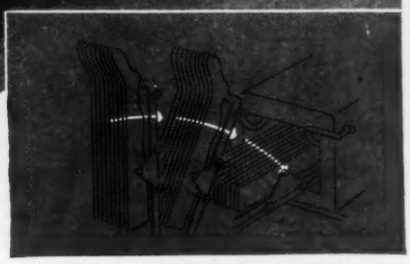
"24" RETORT

SINGLE-OPERATOR NYLON PROCESSING MACHINE

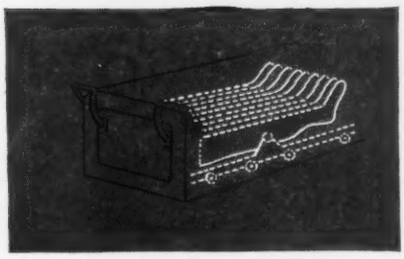
Modern AUTOMATIC FEATURES for Smoother Performance!

- Hydraulic Controls for opening and closing the door; operating feed and exhaust valves.
- Form Carriage is automatically discharged from Retort, righting itself to boarding position.
- Cycle of operation automatically timed.
- Truck permits quick change of entire battery of forms.

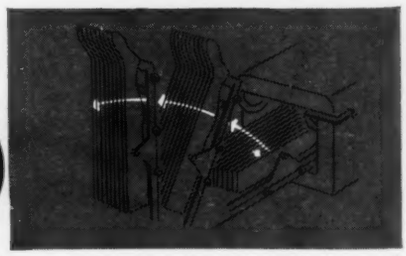
These top interest improvements, PLUS snag-proof, Stainless Steel Forms and Self-Sealing Door for SAFETY!



Form Carriage trips automatically and is lowered to horizontal position on rails. A slight push sends carriage into Retort.



After forms have entered Retort, door closes automatically and setting of hosiery begins.



After hosiery is set, steam is exhausted, door opens automatically, and forms are discharged, automatically righting themselves to working position.

PARAMOUNT TEXTILE MACHINERY CO.

Main Sales Office

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SYLVANIA NEWS
TEXTILE EDITION

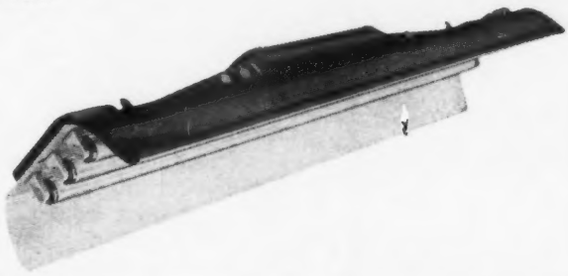
SEPT. *Prepared by* SYLVANIA ELECTRIC PRODUCTS INC., Salem, Mass. 1946

NEW FLUORESCENT FIXTURES DESIGNED FOR MORE PRODUCTION AND BETTER QUALITY WORK

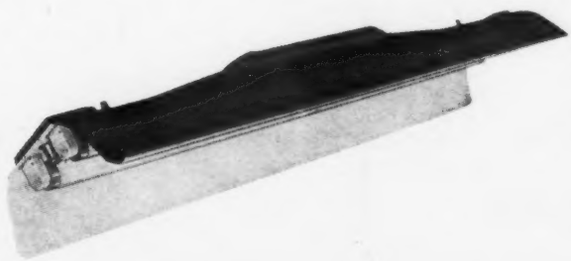
Textile Plants To Benefit From Installations Of Specially Developed Sylvania Fixtures

HF-100

HF-150



HF-235



Give your people good lighting and they'll be happier, healthier — and will produce more for you!

Shown here are three Sylvania fixtures specially designed to give the best light in sight — *save man hours and increase production!*

HF-100, *100-watt fluorescent fixture; complete with 2 Sylvania 40-watt T-12 lamps and auxiliary equipment. Just made for sharply defining warp, other typical textile plant operations.*

A glare area delivers a knockout blow to the eye! Good lighting should not only guide the eye to the focal point of interest, but give high general illumination as well, *without glare!*

Sylvania industrial fixtures are scientifically shielded to prevent painful glare.

HF-150, *150-watt fixture carries 3 40-watt fluorescent lamps. Completely equipped. As with HF-100, may be used for continuous row illumination.*

Good lighting must be so distributed as to keep the size, shape and color of the work object in contrast with the general work area.

Sylvania lighting accomplishes these objectives. Keeps workers healthier, subject to fewer risks — so they are *more efficient* and give *better quality* of work!

HF-235, *235-watt completely equipped fixture. 110-125 volts or 220-250 volts, 60 cycle, A.C. May be used for continuous row lighting.*

Contact your Sylvania Electric Distributor for full details.

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MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

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Made to the most exacting requirements of wool, cotton and rayon textile mills by the "OLD FAITHFUL" crayon specialists who have lead their field for more than a century.
"Empire" is made in 18 clearly distinguishable colors. Large and small sticks as illustrated above.
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Steel & Stainless Steel Tanks
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WE ALSO DO

Industrial Plating for Textile Trade

SOMERSET ENGINEERING CORPORATION
SOMERSET, MASS.
P. O. BOX 402, FALL RIVER, MASS.

ation. Numerous tests on a number of different types of wool yarns have proved conclusively that twist can be set satisfactorily. High-twist yarns for use in carpet making retained a satisfactory set after heating. Good results were also obtained with wool yarns which were to be woven into cloth.

Tests have been run on wet high-twist yarns in which drying and twist setting were done simultaneously. Some low-twist yarns were set without the addition of moisture. Packages of wet wool yarns weighing 759 g. were dried to 619 g. in 11 min. The quality was good and the twist satisfactorily set. Dry low-twist yarns were heated for periods ranging from 4 to 6 min., producing a very satisfactory twist set.

Packages of wool, such as cones, bobbins, and skeins, have also been successfully dried. The use of high-frequency heating in this field has reached the commercial pilot-plant stage and will undoubtedly expand in the very near future.

There are numerous applications in the field of resin-impregnated fabrics in which high frequency may prove advantageous, especially for heating rolls of impregnated cloth for the purpose of curing the resin. Some laboratory work has been done and the results are promising. It is expected that interest in this application will increase as the use of resins becomes more general.

Most synthetic yarns which improve in quality or have better physical properties after heating may be treated in package form with high-frequency power. Exceptional uniform heating can be obtained, with resulting uniformity in quality.

CONCLUSIONS. The use of high-frequency heating by the textile industry will undoubtedly increase rapidly as its advantages and applications become better known. The large number of units now in use at various plants will greatly facilitate future installations by providing a better working knowledge of the technique.

Primarily, high-frequency power offers its greatest advantage when used to heat material in packages. Its ability to heat or dry uniformly, regardless of the size of the package, permits the use of packages above the size limits sometimes imposed by other heating methods.

Costs of operation follow power costs, but are not always in direct proportion. Savings affected by reduced handling, more uniform quality, and reduction in maintenance and overhead, sometimes far offset power costs.

In general, high-frequency power requirements can be figured simply by calculating the hourly B.t.u. require-

you'll get REAL YARN PROTECTION

(Photograph courtesy Universal Winding Co., Providence, Rhode Island)

Here are some of the principal reasons why NOPCO Nylon Coning Oil can be a big help to you in attaining better coning and knitting results.

A firmer bonding material. NOPCO Nylon Coning Oil tends to bind the size to the nylon yarn. This binding action results in minimum flaking, adequate and lasting yarn lubrication.

Non-emulsifying. *Insoluble* NOPCO Nylon Coning Oil checks the over-plasticizing effect of water on the size during knitting. Result—less stripping, rapid fabric drying. This makes for both reduced roll and increased snag resistance.

Clear, even stitch formation. This is another advantage assured because NOPCO Nylon Coning Oil gives essentially uniform lubrication throughout the coning process. That's how NOPCO Nylon Coning Oil *really protects yarn* . . . how it gives valuable aid in keeping product volume and quality up and production costs down.

***"BOOM DAYS"** for nylon lie ahead. Competition will be keen. It will pay you to give your nylon yarn the protection of a dependable coning oil such as Nopco. For further particulars write address below:*

NATIONAL OIL PRODUCTS CO.
HARRISON, N. J.
Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

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FOR NYLON YARN PROTECTION

NOPCO **EVOLVED THROUGH RESEARCH**
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supplies

THE PRODUCTIVE FLAMES OF INDUSTRY

for

- drying
- dye vats
- singeing
- warp sizing
- calendering
- water heating
- pressing machines
- tenter frame drying
- quetsch sizing and finishing

The *productive flames of industry* perform countless other duties. Practically every industrial heating requirement is a logical task for GAS, the versatile fuel, and for modern Gas-fired equipment.

FLEXIBILITY—CONTROLLABILITY—SPEED—UNIFORMITY—ECONOMY; wherever these qualities are required in process-heating, the dependable fuel is GAS. Inherent features of this fuel will suggest many additional industrial applications.

Day by day, successful applications of GAS eliminate production snarls in hundreds of manufacturing plants. Year after year, engineers and production managers specify GAS for increasing numbers of industrial heating installations. More and more the *"Trend is to GAS"* for all industrial heating.

Your local Gas Company solves industrial heating problems every day. Results of these studies will be helpful to you, too. An experienced Industrial Representative will recommend the proper use of GAS for your production process.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

Versatility in Lighting

CEILINGS UNLIMITED

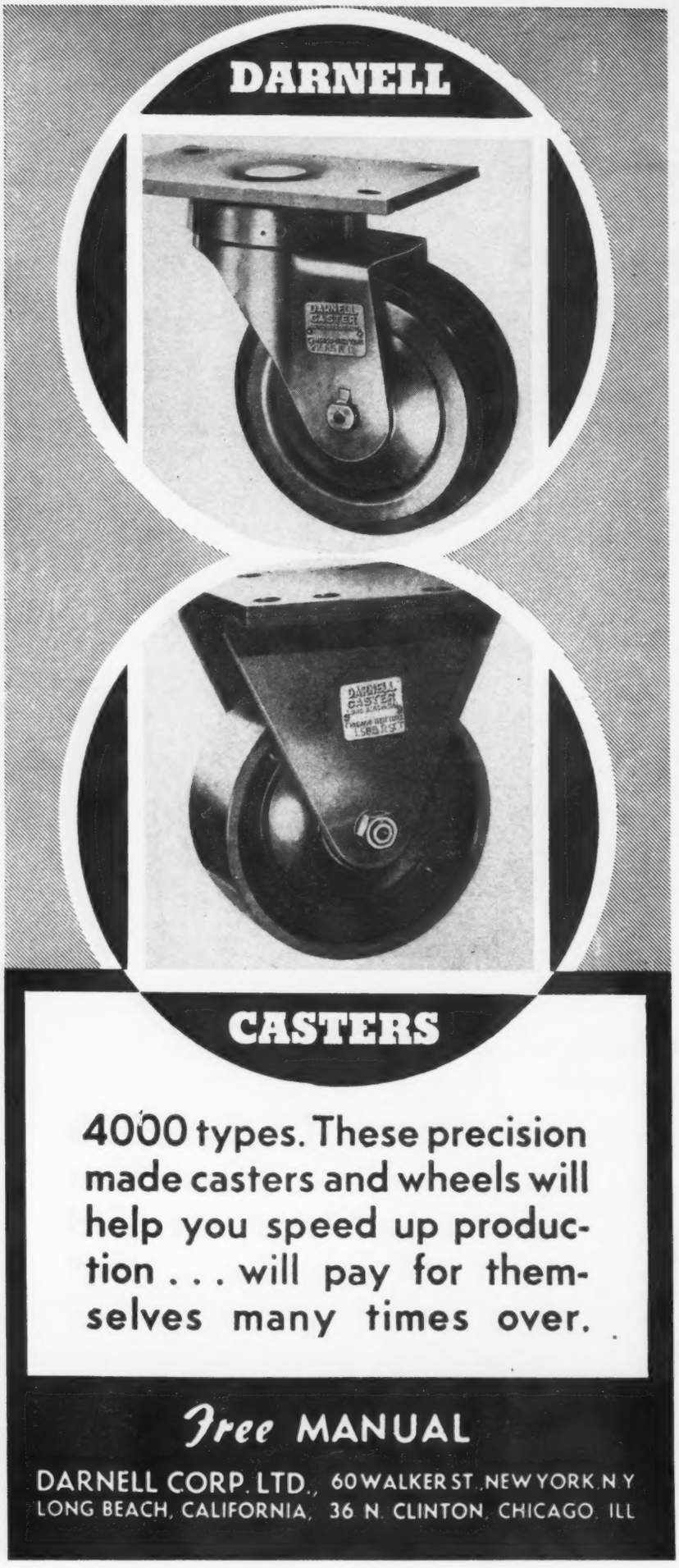
Lighting which opens up new vistas in architectural design — CEILINGS UNLIMITED — for stores, offices, schools, factories, and public buildings, is provided by MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS. The patented MILLER CEILING FURRING HANGER makes possible suspension of ceilings from the lighting system and arrangement of units in continuous rows, blocks, or patterns, as desired . . . speeds installation . . . 50 to 75% less supports from structural ceiling needed. Its wireway assures 50% less wiring cost, and up to 80% less conduit and conduit fitting cost. MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS set LIGHTING on a new, high pinnacle of accomplishment.

THE MILLER COMPANY • MERIDEN, CONN.

Illuminating Division

- HEATING PRODUCTS DIVISION
- ILLUMINATING DIVISION
- FOUNDRY DIVISION
- ROLLING MILL DIVISION

MILLER
SINCE 1844


DARNELL
CASTERS
4000 types. These precision made casters and wheels will help you speed up production . . . will pay for themselves many times over.
Free MANUAL
DARNELL CORP. LTD., 60 WALKER ST., NEW YORK, N.Y.
LONG BEACH, CALIFORNIA, 36 N. CLINTON, CHICAGO, ILL.

ments and dividing by 3,414 (which is the number of B.t.u. produced by 1 kw. working for 1 hr.). This figure, multiplied by the cost per kilowatt-hour for electrical energy, and then multiplied again by two (the average factor for converting 60-cycle line power into high-frequency power delivered into a load) will give total power costs.

As an example, suppose the problem is to calculate the power requirements to dry 1,000 lb. of cotton yarn, dry weight, per hour. Assuming an ambient temperature of 75° F., a water content of 50%, and a specific heat for the cotton of 0.5:

B.t.u. required to raise the cotton from 75° F. to 212° F. = $1{,}000 \times (212 - 75) \times 0.5 = 68{,}500$

B.t.u. required to raise 500 lb. water from 75° F. to 212° F. = $500 \times 137 \times 1 = 68{,}500$

B.t.u. required to convert 500 lb. water to steam = $500 \times 971 = 485{,}500$

Total heat = 622,500 B.t.u. per hr.

High-frequency power in kw. =

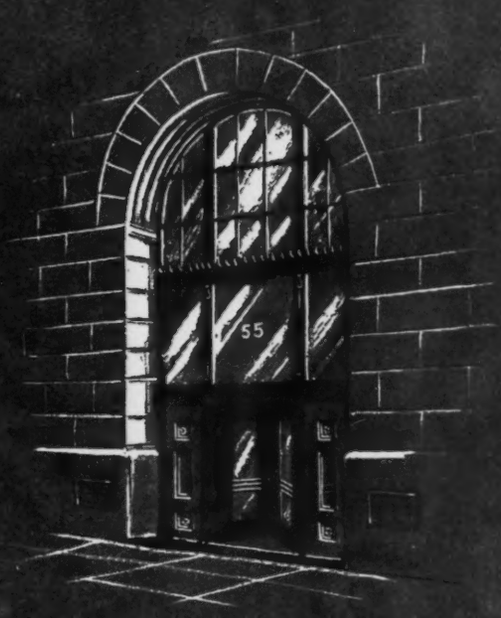
$$\frac{622{,}500}{3{,}414} = 182.3 \text{ kw.}$$

For a job like this, a unit rated at 200 kw. output would be quite satisfactory. If we assume that the power drawn from the mains is approximately twice that of the generator output, a total of 400 kw. will be required. At an assumed cost of 1¢ per kw.-hr., this amounts to $4.00 per hr.

TUBE COST. The costs of the electron tubes are comparatively small when spread over the tube life. For instance, a power tube costing $345 may be expected to last 5,000 hr. or more. Its cost will, therefore, be approximately 7¢ per hr. Since such a tube has an output of 26,000 B.t.u. per hr., 24 of them would be required for the job described above. At 7¢ per hr. per tube, the total tube cost would be $1.68 per hr.

Larger tubes cost much less per kilowatt-hour. One large tube commonly used in industrial high-frequency heating equipment, for example, costs $725 (not quite double the initial cost of the smaller tube) and will deliver approximately 215,000 B.t.u. per hr., which is approximately eight times the output of the smaller tube. Using this type of tube, of which only three would be required for the job illustrated above, the tube costs at 14.5¢ per tube per hr. would be only 43.5¢.

Application problems at present require a considerable amount of individual engineering; but as the use increases and more allied problems are



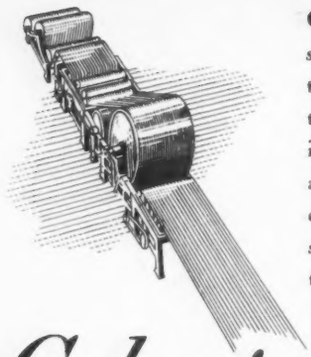
TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE · NEW YORK

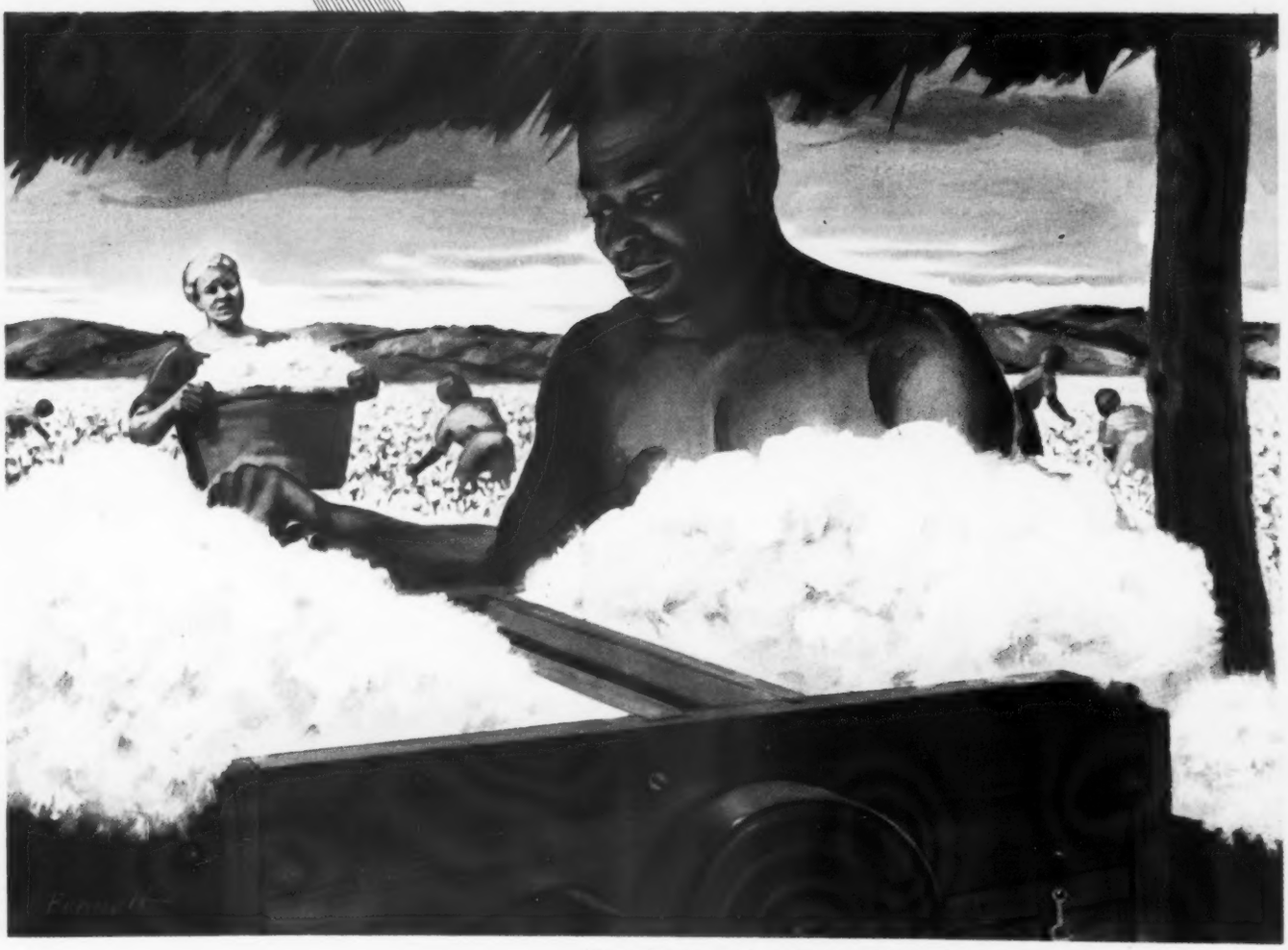


● While visiting a plantation, Eli Whitney saw the difficulty that seed separation presented to the cotton grower and began working on the problem. It is said that Whitney got his idea for the Gin when he saw a cat try to pull a chicken through the bars of the coop but only get his claws full of feathers. From this simple beginning came the machine that started the industrial revolution.

Colonial Weavers..

"INVENTION OF THE COTTON GIN"

Today—the Staley laboratories work constantly to meet the changing requirements for Textile Starches. Making it possible to select the proper starch for any sizing formula from Staley's complete line of thick and thin boiling Corn Starches. Strict chemical control throughout the processing assures consistent, dependable performance from each and every shipment. Staley's prompt service and complete cooperation—proved in more than a quarter of a century in serving the nation's textile mills—is available to you. Staley's can recommend the correct starch for all your sizing requirements.



Number Eleven in a series published as a Tribute to the Development of Weaving through the centuries

In 1794, Eli Whitney invented the Cotton Gin—one of the greatest developments in textile history.

Staley's CORN AND SOY BEAN PRODUCTS REG. U. S. PAT. OFF.

STALEY STARCHES

A. E. STALEY MANUFACTURING COMPANY

DECATUR, ILLINOIS

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PHILADELPHIA
SAN FRANCISCO

DALLAS
CHICAGO

NEW YORK
BOSTON

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solved, this difficulty will be reduced. In fact, some applications have been worked out to a point where generators approaching a package line of equipment are available. Such a situation exists in the plastics industry.

The larger installations will always require more or less engineering, the same as large steam and electrical installations. These problems, however, are as possible of solution in high-frequency heating as they were in steam and electrification. Their solution will pave the way for the use of high-frequency power for all heating and drying jobs where its advantages make it desirable.

North Star Personnel

(Continued from page 155)

2. Ample, well equipped, and easily accessible first-aid stations.
3. Health suggestions through the media of house organ, bulletins, posters, etc.
4. Well-planned safety and accident-prevention campaigns.
5. Being certain that company doctor appreciates importance of keeping workers on the job whenever it can be done without injury to the worker's health.
6. Properly scheduled vacations and rest periods.
7. Cafeteria facilities where nourishing food may be obtained for all shifts.
8. Properly planned working hours to permit the best possible shift arrangement.
9. Elimination of excessively long workweek.

Transportation and Housing

1. Adjusting shifts to permit maximum utilization of existing transportation facilities or arranging for proper transportation by use of buses.
2. Forming motor pools and ride-sharing arrangements with alternations where possible.
3. Assisting employees in finding housing accommodations.

Personal Problems

1. Advising on financial matters, income taxes, and legal problems.
2. Advising and helping on veteran and Selective Service problems.

Morale

1. Proper selection and placement of employees.
2. Proper induction procedures, including the following: Information regarding the company, the work, safety rules, etc.; proper follow-up to see that each employee is being helped to adapt himself to his new surroundings.
3. Proper training and job instruction.

Elimination of monotony and fatigue will do much to curb absences which are charged to illness. Properly spaced rest periods and an adequate

FACTS YOU SHOULD KNOW ABOUT *Industrial Humidification*

EVERY TEXTILE INDUSTRY EXECUTIVE

who wants to be fully informed about INDUSTRIAL HUMIDIFICATION should send for a copy of this 8 page educational bulletin. Learn what benefits can be secured at low cost. This bulletin contains a wealth of handy data for quick calculation of losses due to dry air . . . amount of humidification needed for processing hygroscopic materials . . . and recommendations on installation and use of humidifiers. Send for your copy of this interesting bulletin, today.

Get this Bulletin

AS EASY AND SIMPLE TO USE AS A UNIT HEATER . . .

ARMSTRONG offers industrial humidifiers for as little as $100.00, list, for a unit complete with humidistat, solenoid control valve, fan, steam strainer, drainage trap, and capacity to handle as much as 40,000 cu. ft. of space. Larger sizes are even more economical. All units are built for heavy duty industrial service and are sold on a "money-back" guarantee. Write for catalog.

Nationwide Sales and Service

ARMSTRONG MACHINE WORKS

872 Maple Street • Three Rivers, Mich.

ARMSTRONG INDUSTRIAL TYPE HUMIDIFIERS

Made by the Makers of Armstrong Steam Traps

HILD Floor Machines

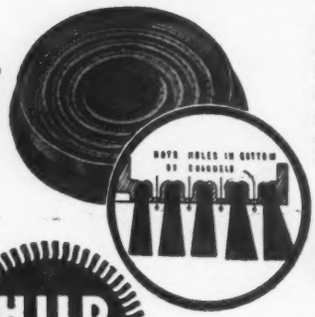
KEEP ALL YOUR FLOORS *Clean* AND *Slip-Safe*

Left—HILD Tank Type Shower-feed Floor Machine

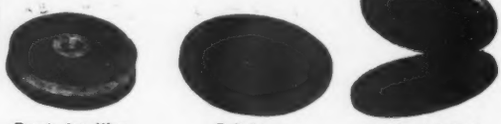
Right—HILD Plain Handle (Standard) Floor Machine

HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes penetrating the brush back between each row of bristles.

HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, trouble-free service.



HILD Shower Feed Brush



Brush for Waxing or Polishing — Polishing Buffer — Steel-wool Pad and Holder

HILD System MAINTENANCE EQUIPMENT & SUPPLIES

***Write today for* FREE CIRCULAR**

HILD FLOOR MACHINE COMPANY

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Sterling Ring Travelers

? ? ? ? ?

Will you get longer life, better results, from using Sterling Ring Travelers? Others have, and we believe that you will, but neither of us will know until you try them.

D. C. Anderson, Box 629, Cedartown, Georgia
J. R. Federline, Jr., Box 968, Spartanburg, S. C.
H. B. Cabaniss, Box 188 Monroe, N. Carolina
Talleres Coghlan Munroe, F. C. Est. Argentina

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

lunch period and pleasant surroundings are helpful. A change in the routine, however slight, may provide enough variety to reduce monotony from an almost unbearable point to one that may be satisfactory or even attractive to the employee. Also, fatigue originates as often in the mind as it does in the muscles, and therefore it must be treated through the mind. Elimination of job dissatisfaction and creation of the will to work in the mind of the employee is one way of reducing monotony and fatigue and thereby also reducing absenteeism. By impressing the employee with the importance of his work and by showing him how his particular job fits into the complete production picture, we can increase his interest in his job and strengthen his desire to be on the job regularly.

Nutrition programs handled properly will add to the general health level of employees and this alone should have a beneficial effect. If it is possible to find workers in the plant who have had cafeteria experience or who can be readily trained, it is a good plan to use some of them in the lunchroom.

Where there are employees who cannot carry on for a full work-week, but who are otherwise good employees, the situation should be faced realistically and a definite schedule worked out so that the employees will have specific days off and can make their plans accordingly—and equally important, the plant can plan more accurately. Such a program can do a great deal of good if used intelligently, particularly with married women who have families.

Individual awards for good attendance records, we think, are probably the greatest incentives of all; and the interesting thing is that these awards do not necessarily have to be monetary in order to be helpful. Presenting service awards for length of service, for example, has worked with great success in our plant. We break these recognition points down into 5 years, 15 years, and 25 years with solid gold pins awarded for all groups. However, the 15-year pin has a pearl, the 25-year pin has a diamond, and in addition, the 25-year group receives gold watches. It costs a lot of money, but all of it comes back with interest in a very short time.

There are many other factors, some apparently insignificant yet actually important, which play a part in creating that singleness of purpose and spirit of cooperation known as good morale. A high quality of supervision, for example, is indispensable. Workers must be made to take an interest in their tasks, to know when their work is improving. Curing all grievances, whether

(*Continued on page 232*)

No Trade Names to Bewilder You...

Just the Name "Hooker" to Remember

You can find the names of all Hooker Products in a good chemical dictionary. That is, all except the most recent products of our Research Laboratories. A better place to find them is in the Hooker Products List, which contains nearly one hundred Hooker Products, their main chemical and physical characteristics, suggested uses and shipping information. But whether you want dye intermediates, mordants, catalysts, solvents or other chemicals you use, you don't have to try to remember a number of synthetic words—just think of Hooker.

A few of the Hooker Chemicals popular in the textile field are listed below. All are of the uniform high quality that insures smooth, uninterrupted operations. For further information on any of these or the other Hooker Textile Chemicals, drop us a line on your business letterhead.

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Acetyl Chloride CH_3COCl; 78.5	Color ..... Clear, colorless to pale yellow Distillation Range ..... 95% of distillate, within 5° C including 51°C	Manufacture of chemical intermediates and dyes.
Antimony Trichloride, Anhydrous $SbCl_3$; 228.1	Antimony Trichloride ..... 99% Min. Iron and Arsenic ..... 1% Max. Lead 0%	Catalyst in organic synthesis; mordant in textile printing. Moisture and fireproofing textiles.
Benzal Chloride $C_6H_5CHCl_2$; 161.0	Clear, yellow liquid. Boiling range ..... 200 to 235° C Specific Gravity 15.5°/15.5°C ..... 1.279 ± .005	Dyestuff intermediate
Chlor Anisidine $NH_2C_6H_3ClOCH_3$; 157.5	Gray crystalline solid. Melting Point ..... 79°C Min. Diazo Test ..... Relatively clear.	Dye intermediate.
Metanitrobenzoyl Chloride $NO_2C_6H_4COCl$; 185.5	Yellow to brown liquid, partially crystallized Last crystal point ..... 28 to 31°C	Manufacture of dyes.
Monochlorbenzene C_6H_5Cl; 112.5	Clear, colorless liquid. Distillation Range ..... 131.3 to 132.3°C	Dyestuff intermediate, preparation of sulfur black, brown dyes.
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point ..... -10 to -22°C Boiling Range 6° including ..... 179°C	Manufacture of pyrocatechin, dye intermediate, other synthetic organic chemicals. Degreasing wool.
Sodium Sulfhydrate NaSH; 56.1	NaSH..70 to 72% NaCl ..... 1% Max. Fe..5ppm Max. Na_2SO, $NaHCO_3$ ..... 1% Max. Na_2S...1 to 2% Cu, Ni, Cr, Mn, Pb..1 ppm Max. Water of crystallization ..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S ..... 60 to 62% Fe ..... 8 ppm. Max. NaCl ..... 1.5% Max. Other Na Salts ..... 2.0% Max. Cu, Ni, Cr, Mn, Pb ..... 1 ppm. Max. Water of crystallization ..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

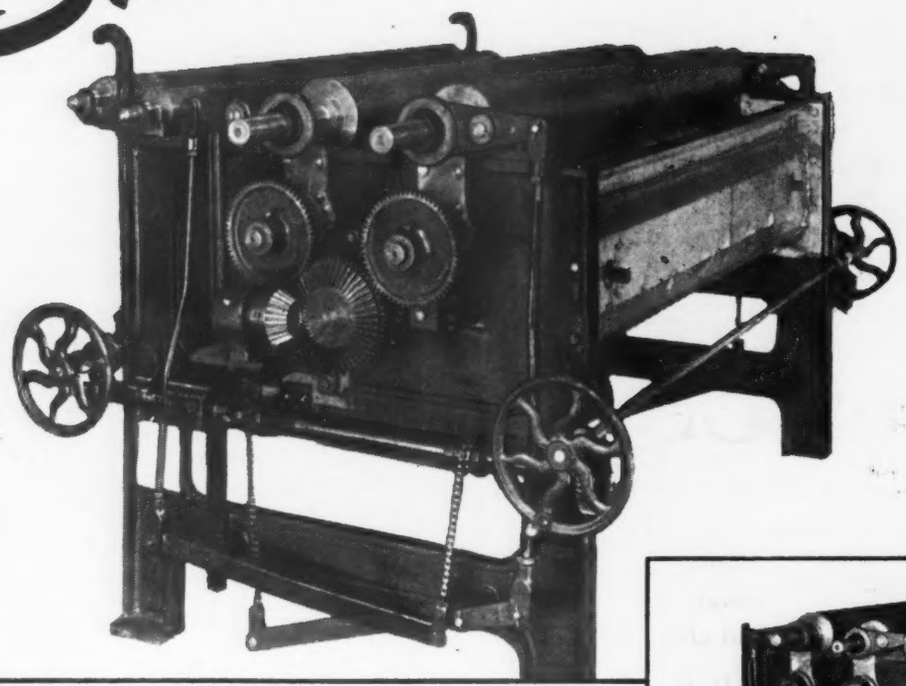
2139

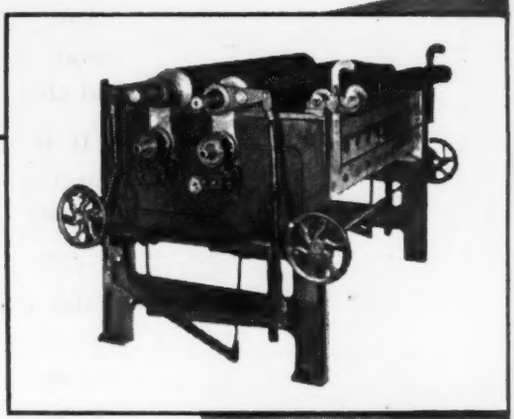
4 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.
New York, N.Y. Wilmington, Calif. Tacoma, Wash.

HOOKER CHEMICALS

Caustic Soda **Chlorine** **Muriatic Acid** **Paradichlorbenzene**

SIZE BOXES

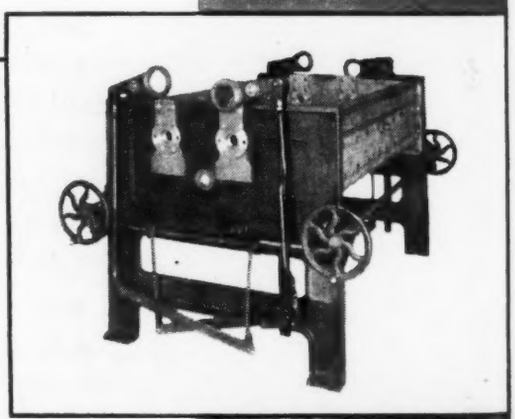




Above: Built of stainless steel, steam-jacketed, strongly braced. Steam jacket prevents dilution because no steam enters size. Note cut-tooth gears.

Right, top: View from other side. Ball bearings on size rolls. Ball bearing hangers on squeeze rolls hold them in perfect alignment and are connected to handwheel to permit raising for washing purposes.

Right, below: View with rolls removed. Deep brass stuffing boxes will not leak size.



This size box is typical of the mill machinery developed and manufactured in our foundry and shop. We can help you to make your manufacturing economical and more efficient. Often equipment you already have can be modernized at minimum cost. We will gladly make a study of your equipment without cost or obligation and submit proposals with estimates. If we can help, write us.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

Wyandotte invests

Twenty-five million dollars . . . in an expansion program designed to help meet ever-increasing demands for industrial chemicals.

It is an investment founded upon faith—faith in the American system of free enterprise and in the continued greatness of this nation.

This program, already begun, is scheduled to be completed within eighteen months. It will greatly increase Wyandotte's capacity to produce calcium carbonate, chlorine and soda ash. Improvements in the method of processing caustic soda will also increase production of this vital material.

Included in the plans are new plants for the manufacture of glycol and synthetic detergents. The erection of the glycol and synthetic detergent plants will mark a major move by Wyandotte into the field of organic chemicals.

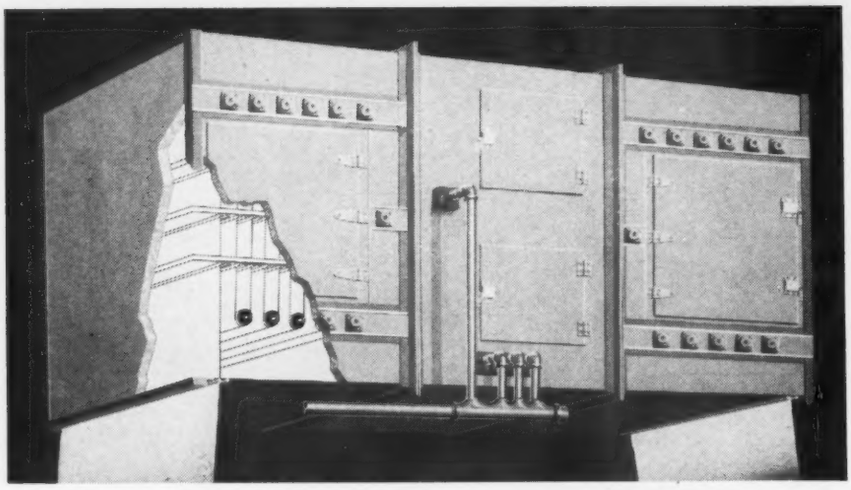
In addition to the huge construction project, Wyandotte is enlarging its sales force, its research, technical and engineering staffs—the better to meet customer needs.

Wyandotte will continue—as it has throughout the period of shortages—to allocate its production fairly to its regular customers at all times. Meanwhile, Wyandotte looks forward to the day when all requirements can be met promptly and entirely.

OFFICES IN PRINCIPAL CITIES

WYANDOTTE CHEMICALS CORPORATION • MICHIGAN ALKALI DIVISION • WYANDOTTE, MICHIGAN

Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine
Hydrogen • Sodium Zincates • Aromatic Intermediates • Dry Ice • Other Organic and Inorganic Chemicals



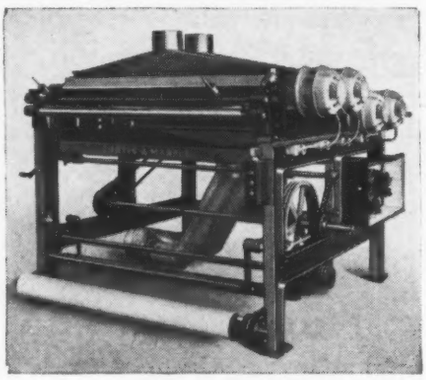
IHE Automatic

CLOTH DRIER

Fast, highly efficient, well constructed and compact. The IHE Recirculating Cloth Drier can be fired with either gas or oil — requires no steam. The answer to your needs for greater drying capacity. Detailed information on request.

Engineered To Fit Your Requirements

INDUSTRIAL HEAT ENGINEERING COMPANY
Textile Drying, Curing and Singeing Equipment
702 WOODSIDE BLDG. • GREENVILLE, SOUTH CAROLINA



TYPE CMR SHEAR

With Electronic Seam Protector

Our latest type C M R Shear completely removes selvage and surface threads from cottons, rayons and silks, at the highest cloth speed of any machine built. It operates more efficiently, gives better results and greater production. The highly sensitive automatic seam protector, *electronically controlled*, gives complete full-width protection on all seams.

Send for New Bulletin No. 335A

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.

(*Continued from page 228*)

real or fancied, is another essential for controlling absenteeism.

CONTROLLING LABOR TURNOVER. It goes without saying that most of the methods suggested for the control of absenteeism, whether involuntary or not, can be applied toward the control of labor turnover. Most personnel men seem to agree that the greatest cause, not only of absenteeism but of labor turnover also, is poor employer-employee relations. If this is so, then it behooves management to examine its employee-relations program most searchingly in order to determine where improvement may be made.

Obviously, while the treatment of absenteeism and turnover is largely similar, the method for determining the exact nature of the turnover problem differs from that of analyzing the problem of absenteeism. In order to develop broad and specific measures for the control of turnover, we must know how bad is the problem, what type of employees are leaving, and why they are leaving. The means for gathering this information will vary greatly, of course, from plant to plant and are largely a matter of individual preference. The extent of the problem will determine the extent to which the company will want to go in developing statistics. Our method, which has been used with considerable success, is as follows:

1. The foreman prepares the discontinuance card, shown in Fig. 1, and hands it to the worker who must deliver it to the personnel department in order to collect his pay. This forces the employee to the personnel office where the exit interview may be held and the real reasons for termination determined. This method also causes the foreman to think twice before discharging an employee unjustly.

2. Everything possible is done to save the employee by straightening out the difficulty in his own department, by transfer, or by other means. If nothing can be done, the personnel department prepares the discontinuance notice, shown in Fig. 2, and gives the original copy to the employee who takes it to the payroll department where he may then obtain his final check. Distribution of the copies of the form may vary according to individual preferences, but the distribution shown in the lower left hand corner of the form has proved satisfactory in most cases.

3. The personnel discontinuance register is next completed from the information shown in Fig. 2.

4. At the end of each month an analysis of separations by age of the employee and by length of service is made. This analysis which is prepared for each sex, is very helpful in establishing hiring policy and in determining effectiveness of the induction program. If preferred, this analysis may be made at intervals of 60, 90, or 120 days,

(*Continued on page 236*)

PENN SALT

Hydrogen Peroxide

H_2O_2

Reg. U. S. Pat. Off.

SAFE—soft handle and high tensile strength
ADAPTABLE—to modern bleaching processes
VERSATILE—an ideal bleach for all fabrics
ECONOMICAL—on basis of overall costs
SUITABLE—for your bleaching problems

Hydrogen Peroxide is the standard bleaching agent for wool, silk, rayon, and cotton knit goods. It is also an excellent bleaching agent of woven cotton fabrics for the production of full whites as well as "bleach bottoms," for dyeing and printing, and for bleaching cotton yarn in package machines.

Penn Salt technologists are at your service to aid in your bleaching problems. You are invited to consult them or to write direct to us for specific information about Hydrogen Peroxide and other Penn Salt products.

Penn Salt Hydrogen Peroxide is supplied in 120 lb. carboys and 265 lb. drums.

Other Pennsylvania Salt Chemical Products used in the Textile Industry

Caustic Soda • Soda Ash • Sulphuric Acid • Hydrochloric Acid • Chlorine • Perchloron* • Sodium Hypochlorite • Chloride of Lime • Bleaching Powder • Carbon Bisulphide • Ammonium Persulphate • Potassium Persulphate • Anhydrous and Aqua Ammonia.

*trade mark Reg. U. S. Pat. Off.

PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals
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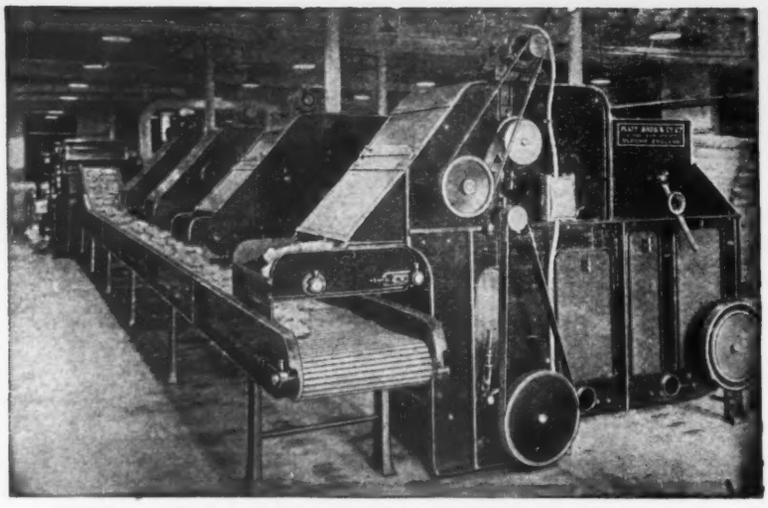
NEW YORK • CHICAGO • ST. LOUIS • PITTSBURGH • CINCINNATI • MINNEAPOLIS • WYANDOTTE • TACOMA

BRITISH TEXTILE MACHINERY



Showing a battery of individually motor driven blending Hopper Bale Openers, specially adapted for the treatment of cut staple.

Let Platt's experts advise you on re-equipment and modernization of your blowing room.

Platt's single process lapping combinations are made to suit all conditions and every type of cotton.

Regularity of supply and perfect blending of constituent cottons are ensured in our system of lap making with:—

1) Less machinery and less floor space.
2) Fewer operatives and reduced labor costs.
3) A superior final product.

Cotton and Rayon Staple blends can be processed with relatively minor modifications. on Platt's Cotton Preparation and Spinning Machinery

PLATT'S BULLETIN—post-war issue now ready. Early application for your copy is advisable.

PLATT BROS
& COMPANY LIMITED
CENTRAL SALES DEPT.
OLDHAM ENGLAND
marketing the products of .. ..

PLATT BROS & CO. LTD.
HOWARD & BULLOUGH LTD.
DOBSON & BARLOW LTD.
BROOKS & DOXEY LTD.
ASA LEES & CO. LTD.

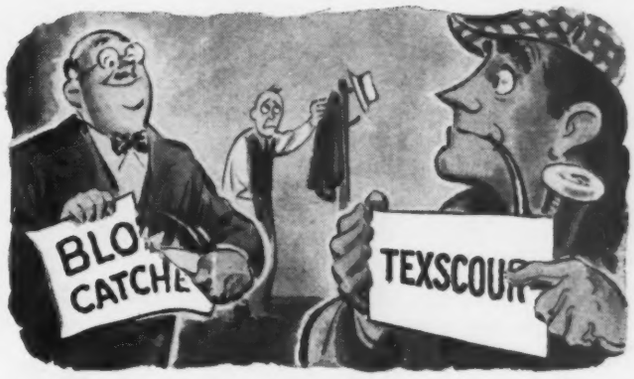
BTM 8

One of a Series of Adventures of the Armour Soap Sleuth

The case of the TROUBLESOME BLOTCHES

The mill manager fixed the Armour Soap Sleuth with a glassy stare. "It's these doggoned blotches in our whites!" he moaned. "Some have them, some haven't—and we're going crazy examining all our cottons!"

"That Blotch-Catcher's a big waste of time and money," said the Sleuth. "We'll find out what's really wrong!" And with that he examined the cloth with his trusty glass.



"Aha," cried the Sleuth, "this one's easy! These blotches are caused by a *faulty kier boil!* Your kier charges need a good low-titer soap like Armour's Texscour."

"You see, Texscour, a red oil base soap in flake form, has a low titer of 8-12° C. Using Texscour as a wetting agent in your kier charges helps the liquor wet the cottons faster and more uniformly . . . you get a *better, cleaner* kier boil and minimize the danger of these troublesome blotches! Incidentally, Texscour is only one of the soaps Armour makes for the textile industry. If you have any other difficulties, just give me a ring. Armour is always glad to help."

INDUSTRIAL SOAP DIVISION

Armour and Company

1355 W. 31st Street, Chicago 9, Illinois

THE TEXTILE INDUSTRY IS TALKING ABOUT

DRUMMOND SOAP FLAKES!

THE SAME FEATURES OF DRUMMOND SOAP—*Plus*

EASY TO USE—SUDS BETTER!

Drummond Flakes are so easy to use! And you couldn't get a flake that suds better! Note these Drummond Soap features: high body with low alkali content . . . leaves fabrics perfectly clean with softer feel, brighter colors, and whiter whites.

Try Drummond Flakes and note the difference in your fabrics. Ask for Drummond Flakes or Solid.

Want to try a sample first? Write today for free working samples. Try them on your own goods. You'll want to use Drummond all the time.

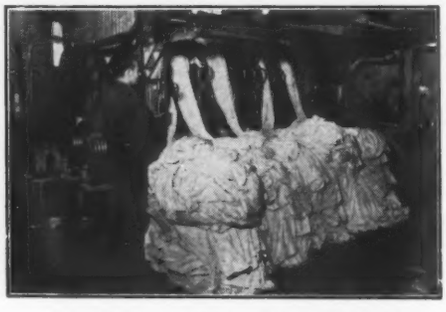
Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

The Fleet Line

Type TLBT PIECE DYE KETTLE



Installation in prominent New England mill making knitted outerwear fabrics.

5 UNIQUE IMPROVEMENTS

1. Nearest thing to universal kettle ever offered. Handles all types of woolens and worsteds from 5 oz. flannels to heavy knitted ski cloth. • 2. No tangles or tie-ups due to tub-design and large drum type Multi-Grip reel (patented). • 3. Wrinkles, creases and dye streaks virtually eliminated, because goods move around and change folds readily. • 4. No slip, due to Multi-Grip reel. • 5. Savings in dyestuffs up to 10%.

RIGGS AND LOMBARD

FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

(*Continued from page 232*)

since all necessary information can readily be obtained from the discontinuance register. Monthly preparation is recommended except for the very small company.

5. The consolidated report shows the hirings, terminations, results of exit interviews, and the reasons for terminations divided between male and female employees. This is the report which goes to top management and provides all information which is really essential for a quick analysis.

During the war period, when many companies granted releases indiscriminately in the belief that there was no use trying to make a person work where he or she did not wish to work, our company adopted the rule of refusing all releases except those specifically provided for in the regulations. In this way the workers soon came to know we would not give a release and at the same time they knew that we were not discriminating. In other words, the answer was "No," to everyone. True, we took sufficient time to explain the workings of Employment Stabilization, and explained why it was necessary, and at the same time gave the employee a re-selling on the company. The writer has had the pleasure of seeing many such employees go out of his office with smiles on their faces, and has had such workers turn out to be much better employees than they had been before. Perhaps this only confirms the recommendation for the post-employment interview, rather than the exit interview.

EMPLOYEES' MANUAL. When we hire a new employee we tell him that we will send him an employee manual in a few days which will help remind him of some of the things which are told to him as part of the hiring procedure. Seven days afterward a letter welcoming the new employee to the company is mailed to him *at his home*, together with the employee manual.

Observe that it is not given to the employee at the plant, because we feel that if the book is first seen by him at his home he is more likely to sit down and read it—and the letter will also tend to make him want to read the booklet. Each letter is individually typed and is personally signed by the personnel manager. While the letter in each case reads the same, the personal touch given by the individual typing and signature more than warrants the additional time consumed. We feel that if the idea is not worth the three minutes it takes to type this letter, address the envelope, etc., then it is not worth doing at all.

A follow-up interview held about ten days after the employee is hired, if handled properly, is an excellent idea.

(*Continued on page 240*)

The Onyxsans*

for

Softer Finish

Better Drape

Lasting Hand

*Patented

THE ONYXSANS are cation active synthetic softening agents, easily applied to every kind of textiles. Their function is to impart softness, smoothness and drape to fabrics which would otherwise be coarse, harsh, rough and almost impossible to improve by chemical treatment. Extremely small amounts of the particular Onyxsan adapted to the finish and fabric involved bring about astonishing results.

Cationic Action Lasts – Through cation activity, the softness provided by Onyxsan is IN the yarn itself, as a result of thorough penetration, effective plasticizing and surface orientation of the Onyxsan molecule. On cotton and rayon the finish is *permanent*.

For Any Textile – An Onyxsan finish on any textile is much different from the results obtained by surface lubrication. On silk and wool, the touch is greatly improved, but the effect is not as lasting as it is on cotton and rayon.

Easy to Use – The Onyxsan suited to your requirements is used to give scoured goods a full dip in the pad, jig or quetsch. Or it can be applied in the last rinse on the dye beck. Goods are then dried in the normal manner.

No "Line" of Finishes Needed – There's no necessity of maintaining a stock of varied finishes when you use Onyxsan. A fine finish on any type of fabric from sheers to the heaviest constructions can be obtained by changing the method of application, the temperature and the amount of an Onyxsan used.

Stable and Uniform – The Onyxsans are uniform in chemical constitution. They do not deteriorate. Textiles finished with Onyxsan do not develop odors, do not show color alterations or mark-offs and do not stiffen in storage.

WRITE FOR A PLANT SCALE DEMONSTRATION!

Other ONYX SPECIALTIES for Textile Finishing

•

Eternalure Resin Finishes
For improved body, stitch and snag resistance in nylon and other hosiery.

Repel-O-Tex D3 and D4
For durable and effective treatment for water repellency on cotton, viscose, acetate and other fabrics.

Neutronyx 228
A non-ionic, non-foaming surface active detergent and emulsifying agent, widely used for scouring acetate, rayon and wool. Unusually valuable as auxiliary in simultaneous scouring and acid dyeing on wool.

ONYX OIL & CHEMICAL COMPANY

JERSEY CITY 2, N. J.

CHICAGO • PROVIDENCE CHARLOTTE • ATLANTA

In Canada: ONYX OIL & CHEMICAL CO., LTD. — MONTREAL, TORONTO, ST. JOHNS, QUE.

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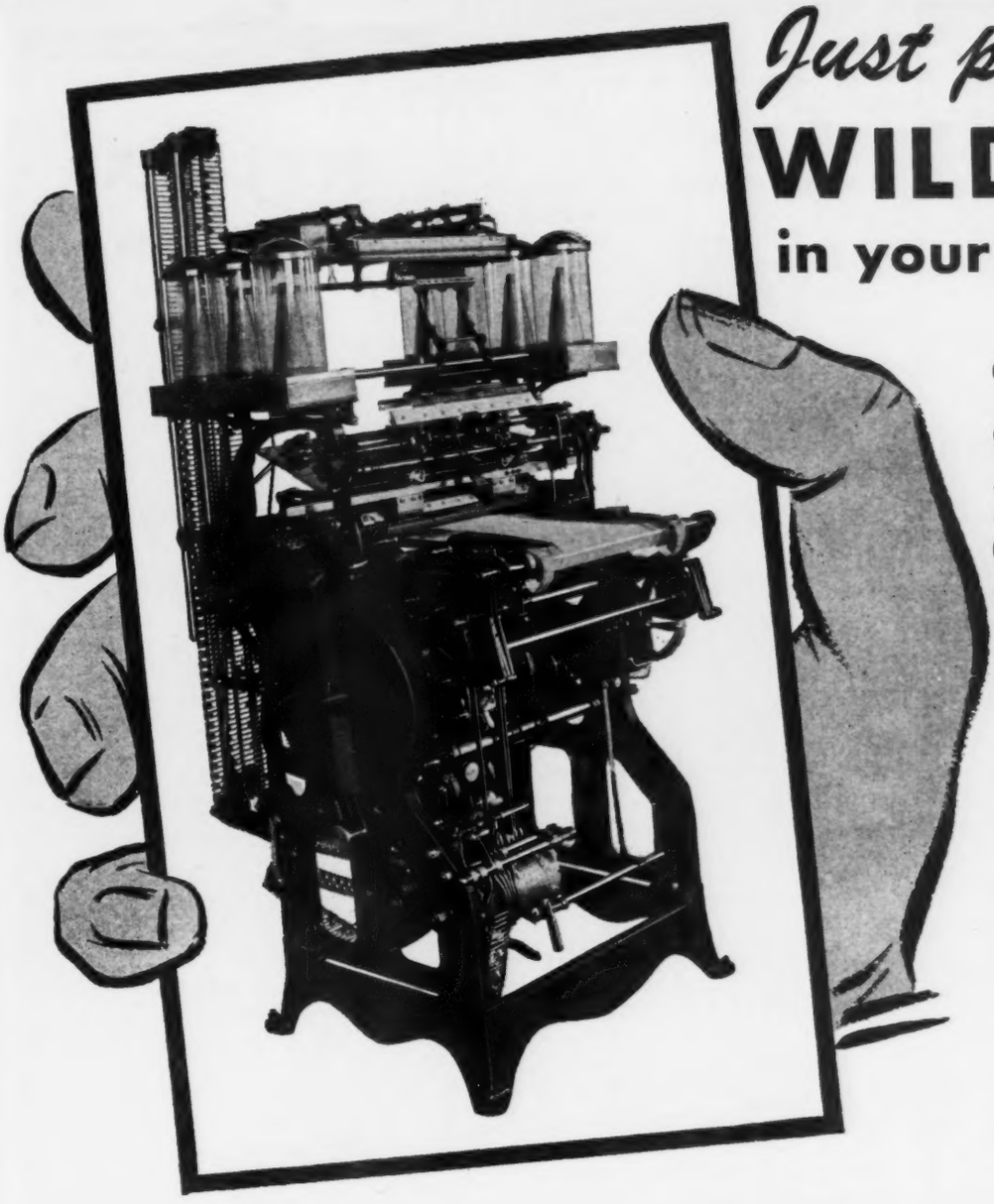
onyx CHEMICALS FOR DYEING AND FINISHING

Improvements are born here

Many textile manufacturers have been able to improve their product or process with the help of our textile laboratory at Greenville, S. C. Our experienced technicians are always happy to be of service on textile problems.

CORN PRODUCTS SALES COMPANY

Greenville, S. C. Greensboro, N. C. Spartanburg, S. C.
Birmingham, Ala. Atlanta, Ga.



Just put this WILDMAN in your plant . . . .

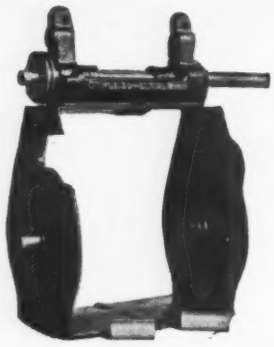
and watch it quickly build your **STOCKING** *Sales and Output*

You know that you can sell all the stockings you can make, regardless of the yarn or gauge—the trick then is to get greater production out of your machines. Take this

WILDMAN SINGLE-HEAD, SINGLE UNIT, FULL-FASHIONED HOSIERY MACHINE

. . . it's the machine that knits the complete stocking in one continuous operation, eliminating the time wasted in the change-over from leggers to footers, and avoiding the costly "seconds" that result from bad matching, etc. It will speed up production and materially improve your product. That's what today's stocking demand calls for. Let us tell you more about this unusual machine.

WILDMAN MFG. CO., Norristown, Pa.



Recondition your CONER-HEADS

Style #50 Universal Coner Heads can be reconditioned with bronze bushings, new shaft and new pulley at a great saving to you.

Write for prices and full details.

Wayne Manufacturing Co.
Honesdale, Pa.
Manufacturers of Textile Mill Supplies

DESIGN and MANUFACTURING ENGINEERS

WEAVING and KNITTING EQUIPMENT

Full Staff of competent engineers and complete manufacturing facilities.

We have successfully solved many special equipment problems for leading mills as well as recognized textile equipment manufacturers.

We invite you to submit to us your problems on weaving and knitting equipment. Write today.

KIWI ENGINEERING CO.
DESIGNERS AND BUILDERS OF SPECIAL MACHINERY
2636 N. Hutchinson St., Phila. 33, Pa.

(*Continued from page 236*)

This type of employee handling will eliminate the need for many "exit interviews." The two ideas used together produce real results.

SIX-STAR PROGRAM. In order to develop measures for the control of turnover, we must first get the facts through observation and through exit interviews and by analysis of causes of separations and comparisons with other firms. Second, we must interpret the facts through the study of the costs of turnover, the reasons therefore, and the probable cures for the problem. Third, we must create an active interest on the part of the top executive and see that his interest is made known to the entire organization. Fourth, the job of directing the attack on the problem must be allocated to the proper person. Fifth, the active cooperation of the executives and supervisors must be obtained if the problems which are revealed are to be solved. Sixth, definite and forceful action must be taken.

If these points are adhered to, in accordance with the particular requirements of each firm, labor turnover, like absenteeism, can be controlled. Positive, not negative, action is required.

Shrinkproofing

(*Continued from page 137*)

of resin is based on the wool, while the percentage of other chemicals is based on the total weight of the load. For mixtures of wool and viscose, acetate, or nylon, the amount is based on the total weight, since Dur-Lana exhausts onto these fibers.

The foregoing procedure is based on a bath to goods ratio of 20 to 1. The amount of acid and salt necessary will vary at different bath ratios. At 15 to 1, for instance, approximately 8% of acid (80%) and 20% of salt is required; at 40 to 1, probably 12% of acetic acid or 5% of formic acid would be needed and up to 50% of salt.

EXHAUSTION RATE. There are five factors which affect the rate of exhaustion: Previous treatment of the goods, concentration of acid, concentration of salt, temperature, and amount of agitation. A 30-min. treating time should apply 4% resin; and a 45-min. treating time, 6% resin. The salt for a 6% application should be divided into six equal parts added at 5 min. intervals.

Nearly any desired result can be obtained by manipulating the five factors. Mill tests have shown that different

(*Continued on page 244*)

QUALITY RICHMOND PRODUCTS

NYLTEX
FOR KNITTING
NYLON

Use in trough

Keeps Needles, Sinkers, and Machines Clean

Does Not Strip Size

Send for FREE Sample

NYLTEX

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PHILADELPHIA 25, PA.

Fallspun
REG. U. S. PAT. OFF.
QUALITY YARNS

FINE WOOLEN & SPECIALTIES

ESTABLISHED 1904

Falls Yarn Mills
WOONSOCKET, RHODE ISLAND

THIS TEAM PULLS *Smoothly* IN HOSIERY SCOURING

Whether your choice falls on soap or synthetic detergents for scouring and dyeing rayon or nylon hosiery, you can count on topnotch results with either Olate or Orvus. A glance at some of the characteristics of these two time-tested cleansing agents will guide you in your choice.

Olate

A pure, neutral soap of exceptionally low titer.

Fast dissolving—free rinsing.

Fluid solutions wet out fibers quickly, evenly, thoroughly—guard against uneven dyeing.

Excellent emulsifying properties. Holds spinning and coning oils firmly in suspension until they are flushed.

Resists oxidation, rancidity and odor development.

ORVUS*

Provides thorough, uniform penetration of dyestuffs.

Thoroughly emulsifies and removes coning and knitting oils.

Prevents lime soap specks and oil spots.

Minimizes danger of non-uniform dyeing on cotton tops and feet.

Eliminates streakiness and blotches.

Procter & Gamble

*TALK OVER YOUR ORVUS NEEDS WITH YOUR PROCTER & GAMBLE SALESMAN.

BRITISH TEXTILE MACHINERY

Copies of This Catalogue will Shortly be available.

The ever-widening fields in which materials consisting wholly or partially of cotton waste are used has made the preparation, carding and spinning of waste a highly specialized industry, involving the use of specially designed machines at every stage of manufacture.

We have an unequalled range of machinery for the treatment and spinning of waste and invite all firms interested to make application on their business letter-heads for copies of our new catalogue on the carding of cotton waste.

PLATT BROS

& COMPANY LIMITED

CENTRAL SALES DEPT.

OLDHAM ENGLAND

marketing the products of . . . . . .

PLATT BROS & CO. LTD.

HOWARD & BULLOUGH LTD.

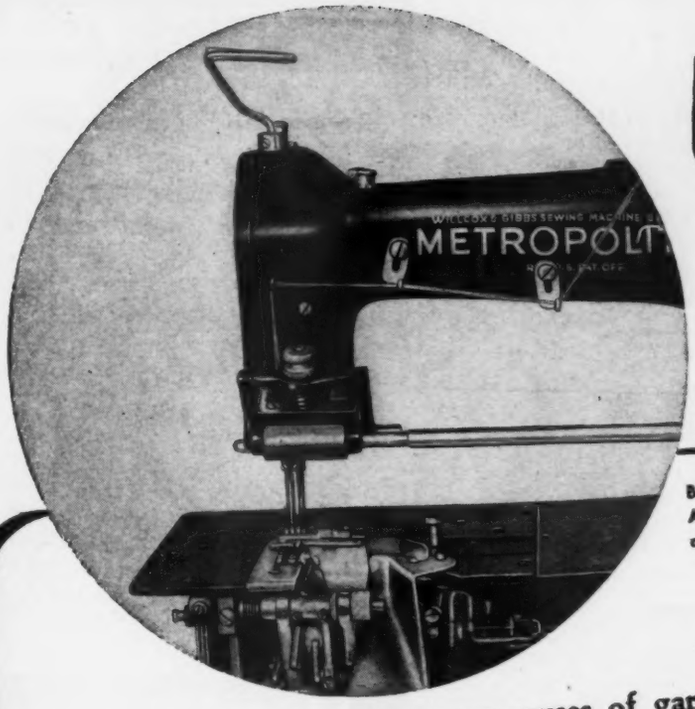
DOBSON & BARLOW LTD.

BROOKS & DOXEY LTD.

ASA LEES & CO. LTD.

WA ¼

UNIFORM SIZES



Built like a miniature puller feed. Actuated by means of a roller type clutch. Driven from the Main Shaft.

One of the most frequent causes of garment rejection—irregularity in size—is virtually eliminated by the "W&G" patented Perfect Stretch Elastic Tension Device, incorporated in machines used for attaching flat elastic to the tops of rayon, silk, cotton and wool undergarments, athletic shorts and similar articles.

A predetermined amount of elastic is delivered to each garment coincidently with the sewing operation, from a reel conveniently located near the head of the machine, and guided automatically through knurled rollers which control and maintain a steady, uniform tension on the elastic—without handling by the operator.

Perfect size to each garment is thus definitely assured.

Send for Illustrated Descriptive Bulletins 837 and 885

WILLCOX & GIBBS SEWING MACHINE CO.
214 West 39th Street, New York 18, N. Y.

RE-NEEDLING

We specialize in re-needling of full-fashion needle bars, welt hooks, narrowing fingers and picot points, etc.

TRICOT

We do lead casting and squaring of Tricot, Milanese, Simplex and Latch needles, sinkers, guides and points.

BERKS NEEDLE STRAIGHTENING CO.

940 Spruce St. Reading, Pa.

Phone Reading, Pa. 4-7302

DRAPER *Dependable* **SOAPS**

For more than 85 years, DRAPER has been providing better soaps for better fabrics.

The Textile Industries long have known that "Depend on DRAPER" has real significance, for the users of DRAPER Dependable SOAPS are producing better cloth.

Write for a demonstration of DRAPER SOAP *quality.*

DRAPER SOAP CO.

DIVISION OF
CONTI PRODUCTS CORP.
171 Front St., Pawtucket, R.I.
Tel. No. Perry 1806

(*Continued from page 240*)

types of wool show different affinities for the shrinkproofing material, and some preliminary experimenting will always be necessary when a new type of wool is to be processed.

The machinery used for application consists of the conventional rotary dyeing equipment such as a Smith-Drum, American Laundry, or paddle-type machine. Drying is effected in the usual hydro-extractors and dryers, with no necessity for excessive temperatures.

Textile Equipment News

(*Continued from page 160*)

turn, raises a stop bar to engage a slotted disc on the handwheel shaft, making it impossible to turn the handwheel as long as there is pressure in the kettle.

To give better control of the dyeing operation, temperature, pressure, and depth indicators have been added to kettles. The temperature indicator is said to make it possible to maintain exact required temperature throughout the operation; and the pressure indicator is reported to disclose faulty circulation, such as channeling, and to prevent excessive build-up of pressure. The depth indicator is designed to assure proper depth of dye liquor and to insure correct ratio of dye liquor to stock.

Electric Hand Truck Tiers 4,000-lb. Load

A new electric hand truck with high-lift tiering unit, called "Transtacker," has been announced by Auto-

Electric hand lift truck stacks load 68 in. high. (Automatic Transportation)

EFFICIENCY PLUS

To develop the full efficiency of cards, equip them with Booth Card Clothing. This Clothing offers many advantages.

BOOTH

Quality Card Clothing

Has a firm foundation which prevents wire from losing pitch; is flexible, which reduces possibility of "shelling out". All clothing is available with rehardened points, if specified.

Benjamin Booth Co.

Allegheny Ave. & Janney St.
PHILADELPHIA 34, PA.

Solves the Problem of Mailing List Maintenance!

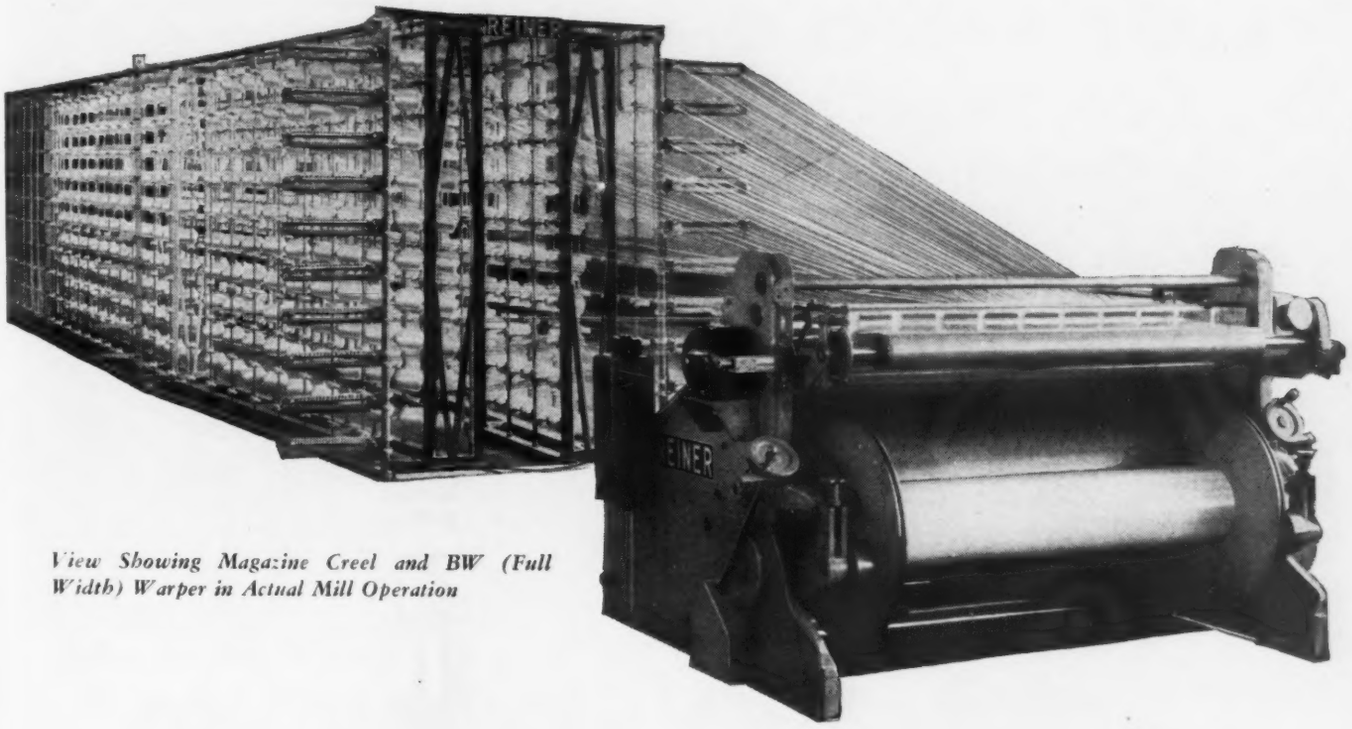
Probably no other organization is as well equipped as McGraw-Hill to solve the complicated problem of list maintenance during this period of unparalleled change in industrial personnel.

McGraw-Hill Mailing Lists cover most major industries. They are compiled from exclusive sources, and are based on hundreds of thousands of mail questionnaires and the reports of a nation-wide field staff. All names are guaranteed accurate within 2%.

When planning your direct mail advertising and sales promotion, consider this unique and economical service in relation to your product. Details on request.

McGraw-Hill Publishing Co., Inc.
DIRECT MAIL DIVISION
330 West 42nd St., New York, 18, N. Y.

When Production Depends on a Single Thread



View Showing Magazine Creel and BW (Full Width) Warper in Actual Mill Operation

OTHER REINER WARPING EQUIPMENT

- Single Type Creels
- Truck Creels
- Special Duty Creels
- Stop Motion Units
- Full Width and Sectional Warping Equipment — from 18" to 84" and varying spool diameters.
- Multiple Beam Warpers for Narrow Fabrics.

—you will want to be certain about the equipment you are using.

Reiner Creel features include the latest Reiner Mercury Stop Motion (not subject to corrosion or affected by lint) which acts instantaneously in case of yarn breakage thus cutting down stoppage to a minimum. Other Creel features are overhead delivery, all steel construction, cone stabilizers, disc or counterbalanced tensions, a break annunciator, and a movable tension gate for balloon control.

Creel sections can be added on without disturbing existing units.

We build creels for your special requirements or floor space.

A richly illustrated catalog giving these and other features is available upon request.

Speed and efficiency are stressed in the various types of sectional as well as full width warpers that take care of the multiple needs of the knitting, weaving and other textile trades.

Reiner High Speed Warpers give you constant thread speed, easy doffing of beam, direct beam drive, slow starting speed independent of warping speed, and controlled hardness or softness of the warp beam.

There are many other features contained in our warper catalog which is free for the asking.

ROBERT REINER INC.

FOUNDED IN 1

550-556 GREGORY AVENUE
WEEHAWKEN, NEW JERSEY

10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505.

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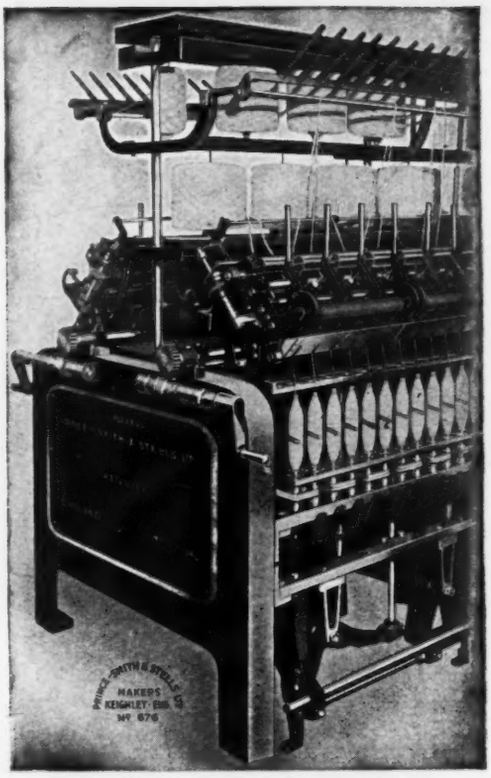
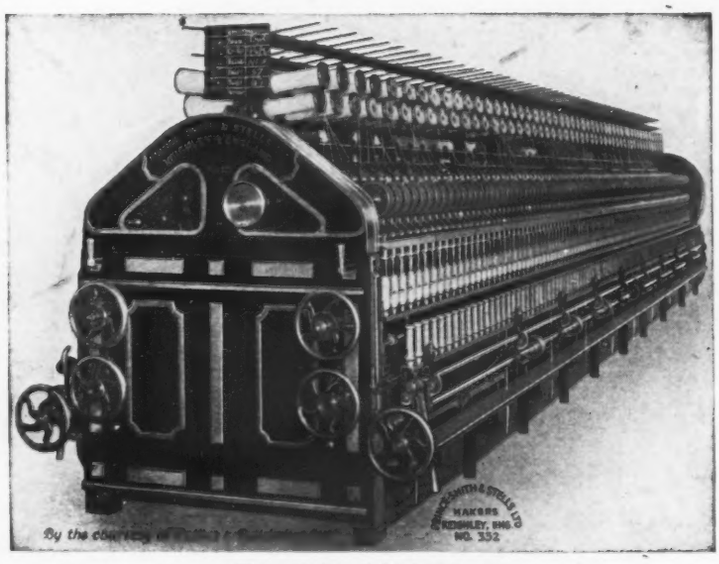
THE CONTINENTAL
AND ENGLISH–
SYSTEMS OF COMBING,
DRAWING, SPINNING
AND TWISTING



Ring Spinning Frame—Continental Type

WORSTED



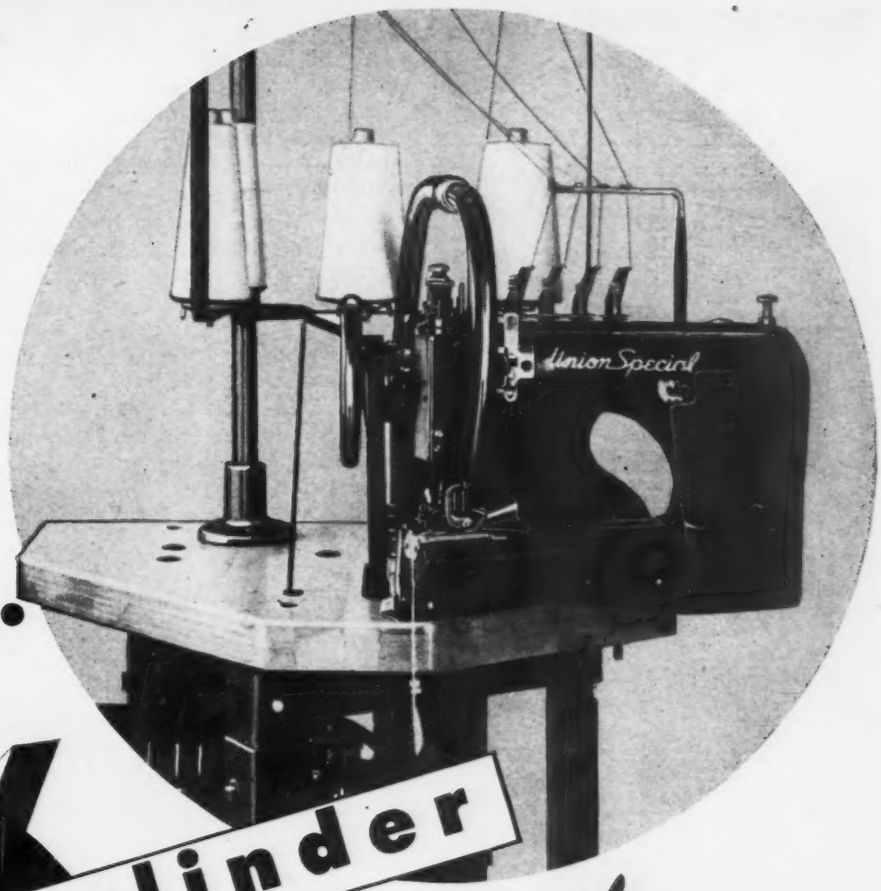
Flyer Doffer Spinning Frame

THIS UNIQUE POSITION
MEANS WE CAN OFFER
YOU OUR SERVICES
NO MATTER WHICH
SYSTEM YOU ARE
INTERESTED IN.

Sole Agents U. S. A. and Canada
ATKINSON HASERICK & CO.
211 Congress Street, Boston, Mass.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS
KEIGHLEY (Yorkshire) ENGLAND



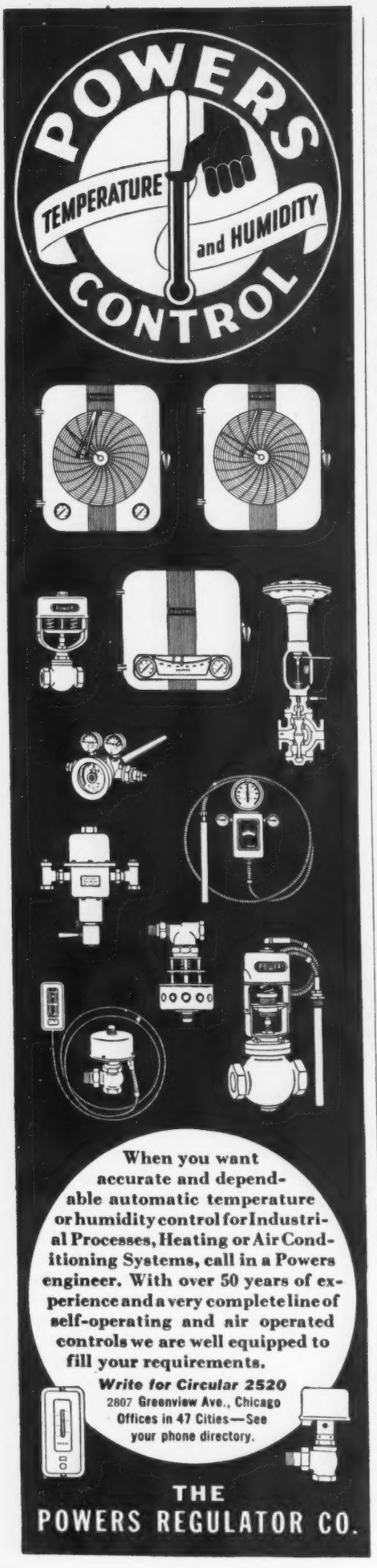
New improved... cylinder feed off-the-arm ...machine

- **NEW THREAD CONTROL PRINCIPLE!** Guards against thread breakage and skipped stitches. Insures tight seams.
- **SMOOTH OPERATION!** Straight drive from main shaft to looper shaft.
- **POSITIVE FEED!** Feed-bar has been redesigned for increased strength and rigidity.
- **SEALED MECHANISM! AUTOMATIC LUBRICATION!** Machine operates longer with a minimum of attention.
- **PUSH-BUTTON CONTROL!** Looper throw-out located at main shaft, with "push-button" remote control.
- **EASY ADJUSTMENT!** Loopers mounted in individual holders on the shaft permit independent adjustment of each looper.

Long the leaders for tubular felling work on shirts, pajamas, overalls, and similar garments, Union Special's Class 35700 and Class 35800 machines now incorporate new refinements in design that make them even better investments for manufacturers interested in increasing production and cutting costs. Known as the V-cylinder series in the feed-off-the-arm line these new fellers offer a good example of the kind of improvement Union Special is bringing about in a wide variety of industrial sewing machines.

Union Special Machine Company

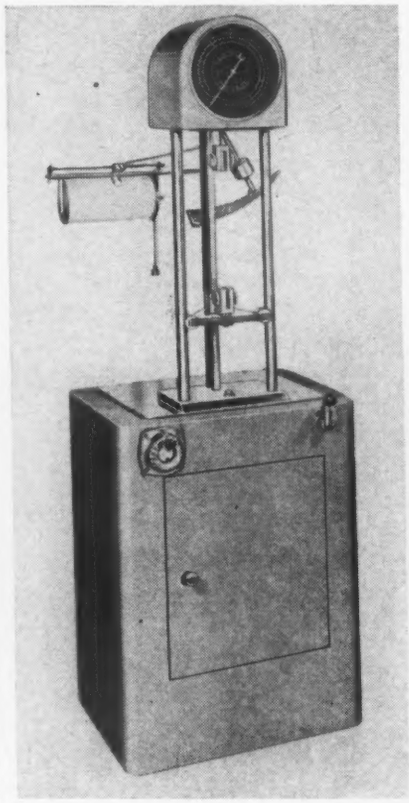
486 NORTH FRANKLIN STREET CHICAGO 10, ILLINOIS


POWERS
TEMPERATURE and HUMIDITY
CONTROL
When you want accurate and dependable automatic temperature or humidity control for Industrial Processes, Heating or Air Conditioning Systems, call in a Powers engineer. With over 50 years of experience and a very complete line of self-operating and air operated controls we are well equipped to fill your requirements.
Write for Circular 2520
2807 Greenview Ave., Chicago
Offices in 47 Cities—See your phone directory.
THE
POWERS REGULATOR CO.

matic Transportation Co., 149 West 87th St., Chicago 20. Made in 4 models—for platforms, open-face pallets, straddle-type pallets, and extended-load pallets—the truck is available in load capacities from 2,500 to 4,000 lb. and working heights up to 68 in. It is said to be designed for uses where weight, size, speed, or cost of larger units are impractical, and to effect approximately 50% saving in weight and cost over standard high-lift platform or fork trucks of similar load capacities.

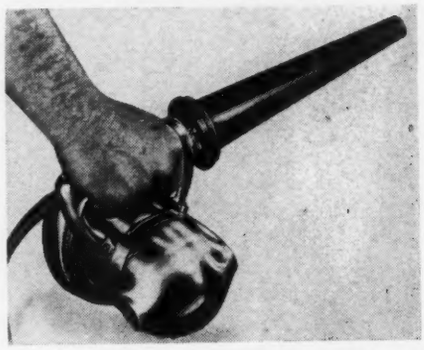
The Transtacker has "finger-tip control." Two buttons on the guide handle control forward and reverse power, while a third controls lift. Horizontal speed and "dead-man control" brake are controlled by position of the guide handle.

Strength Tester Has Four Ranges



A new strength tester announced by W. C. Dillon & Co., Inc., 5410 W. Harrison St., Chicago 44, is designed for testing light materials and has four ranges of capacity, each said to be available instantly. The ranges are: 0 to 10 lb. in 1-oz. steps, 0 to 25 lb. in 2-oz. steps, 0 to 50 lb. in 4-oz. steps, and 0 to 100 lb. in 8-oz. steps. The lower grip is said to be continuously variable in speed from 0 to 19 in. per min. Accuracy is reported to be 0.5%. Pendulum action, maximum-load reading, stroke-limiting switches, forward-reverse switch, elongation gage, and stress-strain recorder are other features claimed. (Dillon)

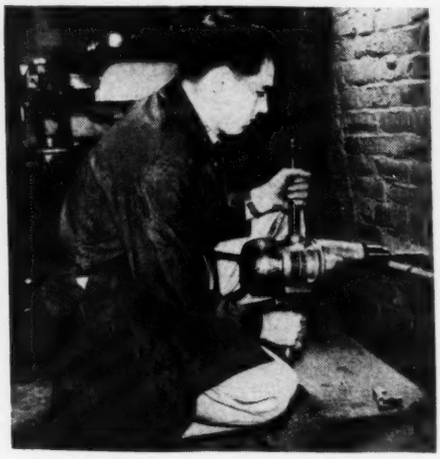
Sealed Bearings in Blower Need No Lubricating



A new portable electric blower for removing dust, dirt, and lint from machinery has been announced by Breuer Electric Mfg. Co., N. Ravenswood Ave., Chicago 40. Known as No. 46, the blower's features are said to include balanced fan, full-diameter solid back, greater air displacement, and sealed ball-bearings which require no subsequent lubrication. (Breuer)

Bit With Carbide Tip Aids Masonry Drilling

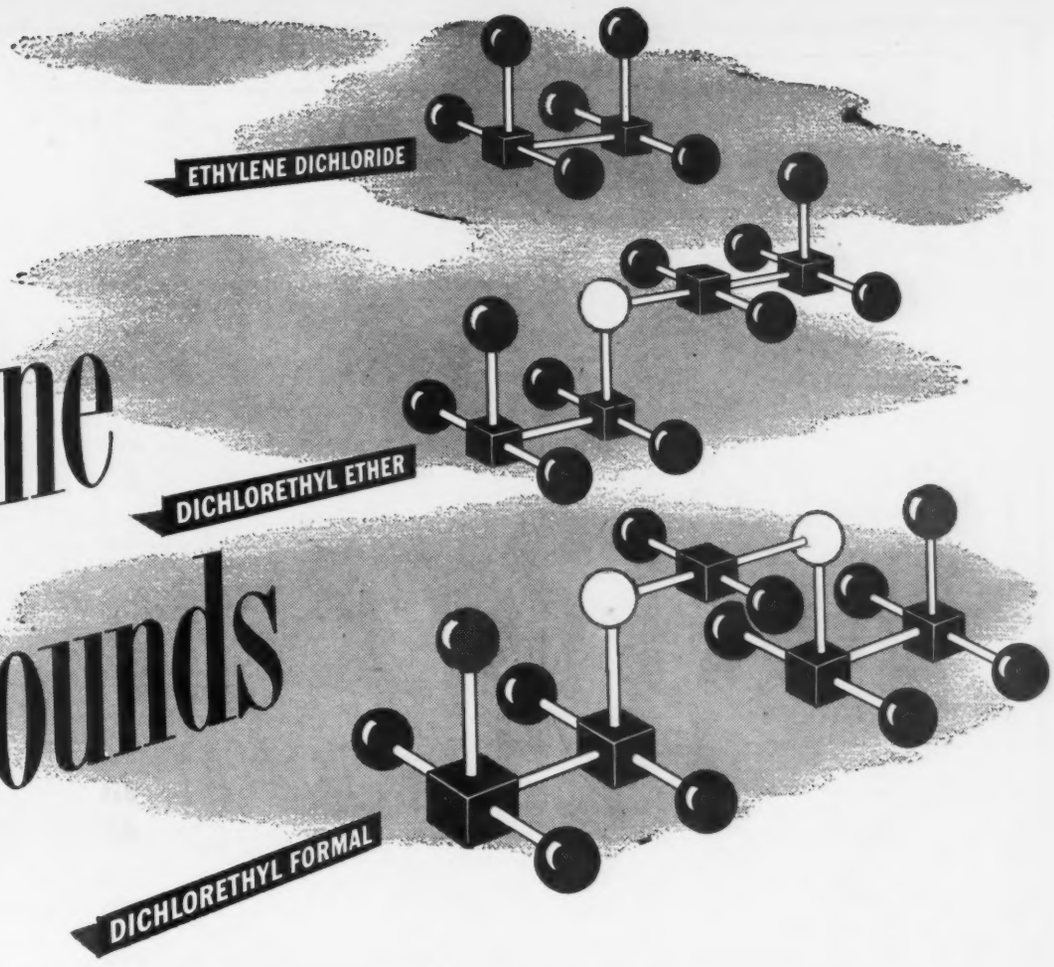
A drill bit tipped with carbide for use in rotary electric drills is being manufactured by New England Carbide Tool Co., 60 Brookline St., Cambridge, Mass. The bit is intended for use with the company's cyclone drill for drilling holes in concrete, brick, tile, etc. They are available in sizes ranging from $\frac{3}{16}$ to $1\frac{1}{2}$ in. in diameter.



The carbide tip of the bit makes possible rapid rilling in brick, concrete, etc. (New England)

Hydraulic Variable-Speed Drive Has Special Motor

A new hydraulic variable-speed transmission manufactured by Portman Machine Tool Company, 70 Mill Road, New Rochelle, N. Y. has been designated Model HT2. It is equipped with an axial air-gap type, built-in electric



chlorine compounds

Industrial Solvents — Chemical Intermediates — Fumigants

The molecules represented here are some of the chlorinated organic compounds that have been developed by Carbide and Carbon Chemicals Corporation to meet the needs of industry.

Chlorine compounds are widely employed as cleaning compounds, and solvents in resin coatings and rubber cements.

They are valuable to the textile industry in kier boiling and degumming. Because they increase detergent properties, they are incorporated in scouring compounds and dry-cleaning spotting agents.

Chlorine compounds are useful as general industrial fumigants for the control of insect pests.

As chemical intermediates, chlorine compounds are used in the manufacture of acids, amines, nitriles, phenol derivatives, yellow pigments, resins, and oil-resistant rubbers.

For further information about these compounds, call or write our nearest office for the booklet, "Chlorine Compounds" (Form 4769).

These are the chlorine compounds we produce:

ETHYLENE DICHLORIDE
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PROPYLENE DICHLORIDE
BUTYL CHLORIDE
DICHLORETHYL ETHER
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DICHLORETHYL FORMAL
TRIGLYCOL DICHLORIDE
ETHYLENE CHLORHYDRIN
PROPYLENE CHLORHYDRIN
CHLORACETOACETANILIDE

CARBIDE AND CARBON CHEMICALS CORPORATION
Unit of Union Carbide and Carbon Corporation
UCC
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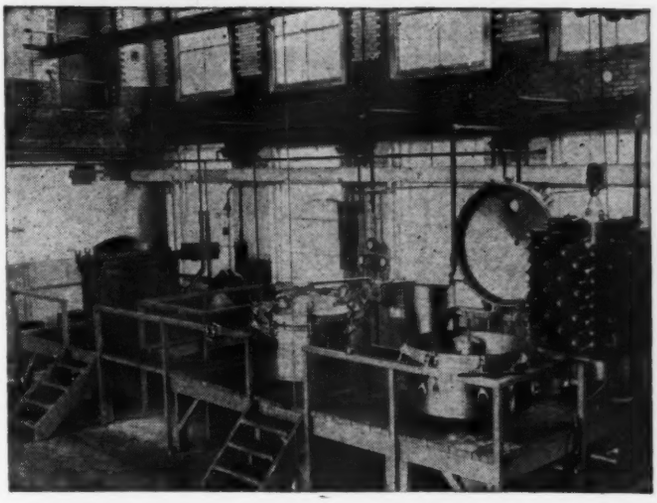
STIENEN
TRADE MARK

ORIGINATORS *and* LEADERS OF ALL PRESSURE DYEING, THE WORLD OVER

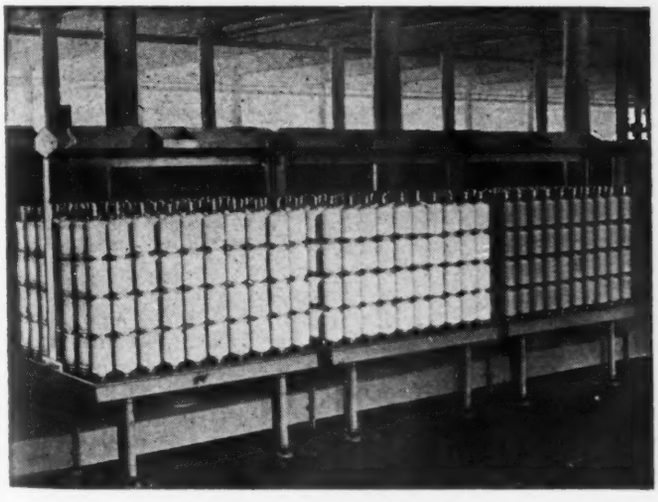


Today's efficient "OBERMAIER" Pressure Dyeing Machines (the development of half a century's service) offer these advantages:
Horizontal Spindles adaptable to pressure extraction.
Ease of Loading.
Cones or Cheeses can be used alternately with low liquor ratio.
Even temperature throughout the bath maintained by the inner heating cylinder.
No limit to size of batch.
Continuous rinsing. With flow in either direction.
Economical dyeing with vat colors.
Balanced five-way valve for reversing the dye liquor.
Easy accessibility to pump.

Above—Model KRAG package dyeing installation with closed pressure extractor in complete cycle on the same material carrier.

Opposite—Model UKSAG package dyeing installation with closed pressure extractor and open dryers in a complete cycle on the same material carrier.

Below—*"Stienen"* self-sealing package dryer.



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Cones • Rawstock • Skeins
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Here is a way to have the exact relative humidity you want in your plant without free moisture in the air.

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Air-Perme-Ator is a self-contained unit that evaporates 10 lbs. of water at a cost of 1¢ — *the lowest cost of any existing humidifying system.*

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Air is passed through the unit and emerges laden with moisture 500 times finer than spray—never moist enough to condense on metal, but in perfect suspension ready to condition yarns, eliminate static, and maintain solubrious atmospheric conditions throughout any enclosed space.

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No elaborate permanent arrangements are required for the installation of Air-Perme-Ator, only connections with the water and electrical system of the plant—new or old.

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Air-Perme-Ator takes little floor space or can be conveniently located on walls or ceilings without loss of efficiency.

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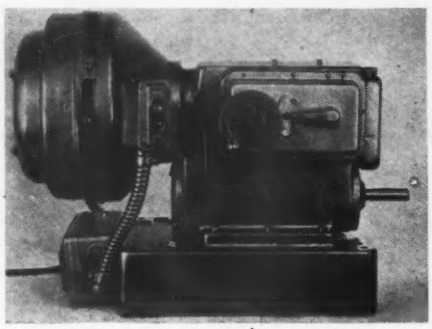
drive motor and is available in 2-, 3-, and 5-hp. sizes.

Infinitely variable speeds throughout the entire speed range from zero to full drive-motor speed, both forward and reverse, are said to be available. In addition, starting torque is provided at all times for heavy load starting, it is stated. Various types of controls, including handwheel, can be furnished.

Overall dimensions of the drive are: 17¼ in., height; 12 in., width; 12 in. length.



Hydraulic variable-speed drive provides complete range of speed from zero to full motor speed. (Portman)

Blower Delivers Hot or Cold Air

New portable dryer announced by Burrell Technical Supply Co., 1936-38 Fifth Ave., Pittsburgh 19, features light-weight, non-pulsating hot or cool blast, adjustable base, a-c. or d-c. operation on 115v., and fully insulated construction. (Burrell)

USEFUL ACCESSORIES

For the Textile Mill

Low-Speed Tachometers

Two low-speed tachometers have been announced by Metron Instrument Co., 432 Lincoln St., Denver 9, Colo. Series 40B switchboard tachometer reportedly measures speeds as low as 1 r.p.m., or ¼ f.p.m. Series 25B hand tachometer is said to measure speeds of 10 r.p.m., and 1 f.p.m., and to have three range scales: 10 to 200 r.p.m., 20 to 400 r.p.m., and 50 to 1,000 r.p.m.

Seal-Feed Strapping Machine

A new seal-feed strapping machine announced by Signode Steel Strapping Co., Chicago, is said to tension, cut, and seal in three continuous operations. It is said to strap boxes, cartons, crates, packages, or bundles in a wide range of sizes and weights, and is available for use with ⅜-in. and ½-in. strap in .015-in. and .020-in. thicknesses.

Boiler Feed-Water Test Kit

Testing of boiler feed water for hardness, alkalinity, and chloride content is said to be readily accomplished with a new test kit made by The Permutit Co., 330 West 42nd St., New York 18. The kit contains solutions and precision-made pippette droppers and comes in a portable white-enamel cabinet measuring 10 x 10 x 4¾ in.

Concrete Floor Treatment

Dusting of concrete floors is stopped instantly and longer life for floors is obtained through the use of "Stontop," it is announced by Stonhard Co., 403 N. Broad St., Philadelphia. Applied to new or old concrete floors, Stontop is said to penetrate and, by chemical reaction with the cement, harden and fortify the surface against the effects of acid, grease, oil, and abrasion.

Vibration Dampeners

Rubber-and-metal Vibro-Insulators designed to cushion all types of industrial equipment have been announced by the B. F. Goodrich Co., Akron, Ohio. Recommended for use as feet or bumpers for office equipment, portable machinery, tables, blowers, fans, pumps, etc., the rubber is of 45 durometer hardness and is said to give quieter operation, and greater stability of equipment and vibration absorption.

Plastic Spool

A 2-piece spool announced by the Formica Insulation Co., Cincinnati, is said to overcome the tendency of some bobbins to develop cracks between the barrel and the heads. The outer shell of the spool is a single laminated-plastic piece; the center adapter is made suitable to any size spindle or mandrel, and is locked in posi-

SQUARE CUT

Thread

from

LIQUID LATEX

It's the Better Thread because it's —

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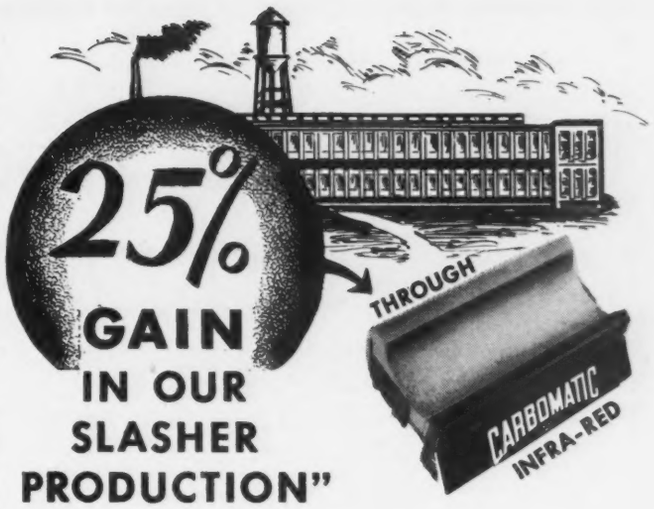

• "The auxiliary drying equipment on our slasher shows us about 25% gain in production," writes this textile mill man (name on request) that nearly three years ago installed CARBOMATIC INFRA-RED burners.

"As a result of the use of these burners, the yarn is partly dried before it reaches the cylinders and there is a marked reduction in the flattening of the yarn, as well as a better splitting action as the yarn goes through the splitting rods. Consequently, we get a better warp."

CARBOMATIC INFRA-RED

RADIANT HEAT

GENERATORS

(GAS-FIRED)

installed on Tenters, Palmers, Singers, Slashers, Curing Ovens—for ANY drying or heating need — invariably bring your costs down, greatly speed up production, and help turn out products of a higher, more uniform quality. Operation is safe, simple, efficient. CARBOMATIC pioneered modern infra-red heating in the Textile field—and 65% of our orders now are repeats! Our recommendations always cover your individual requirements.

Write for Bulletin TW-9

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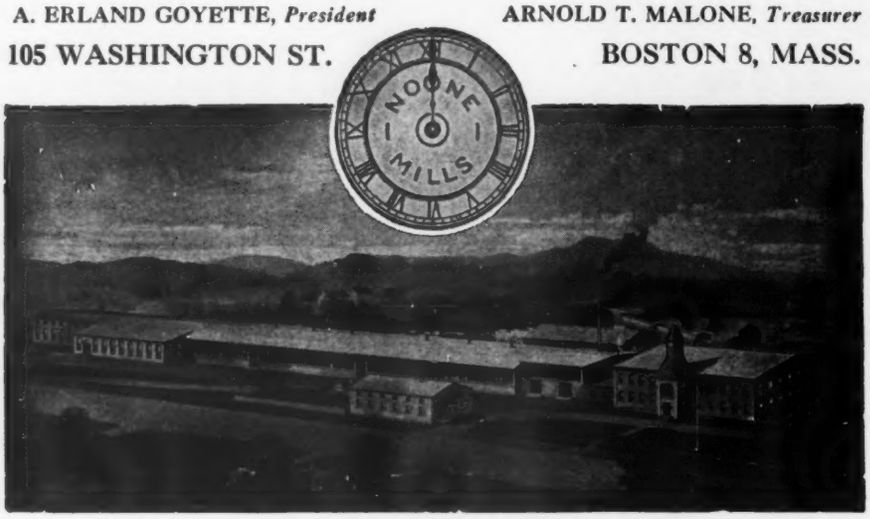

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Long experience in manufacturing Slasher Cloths and continuous experimenting have enabled us to produce several types of Slasher Cloth, each especially constructed to give best results on the particular kind of yarn to be sized.

The proper Slasher Cloth for each type of yarn means properly sized warps, less loom stops, easier weaving, more and better production, *and lower cost.* We can supply you the right cloth for your particular work.

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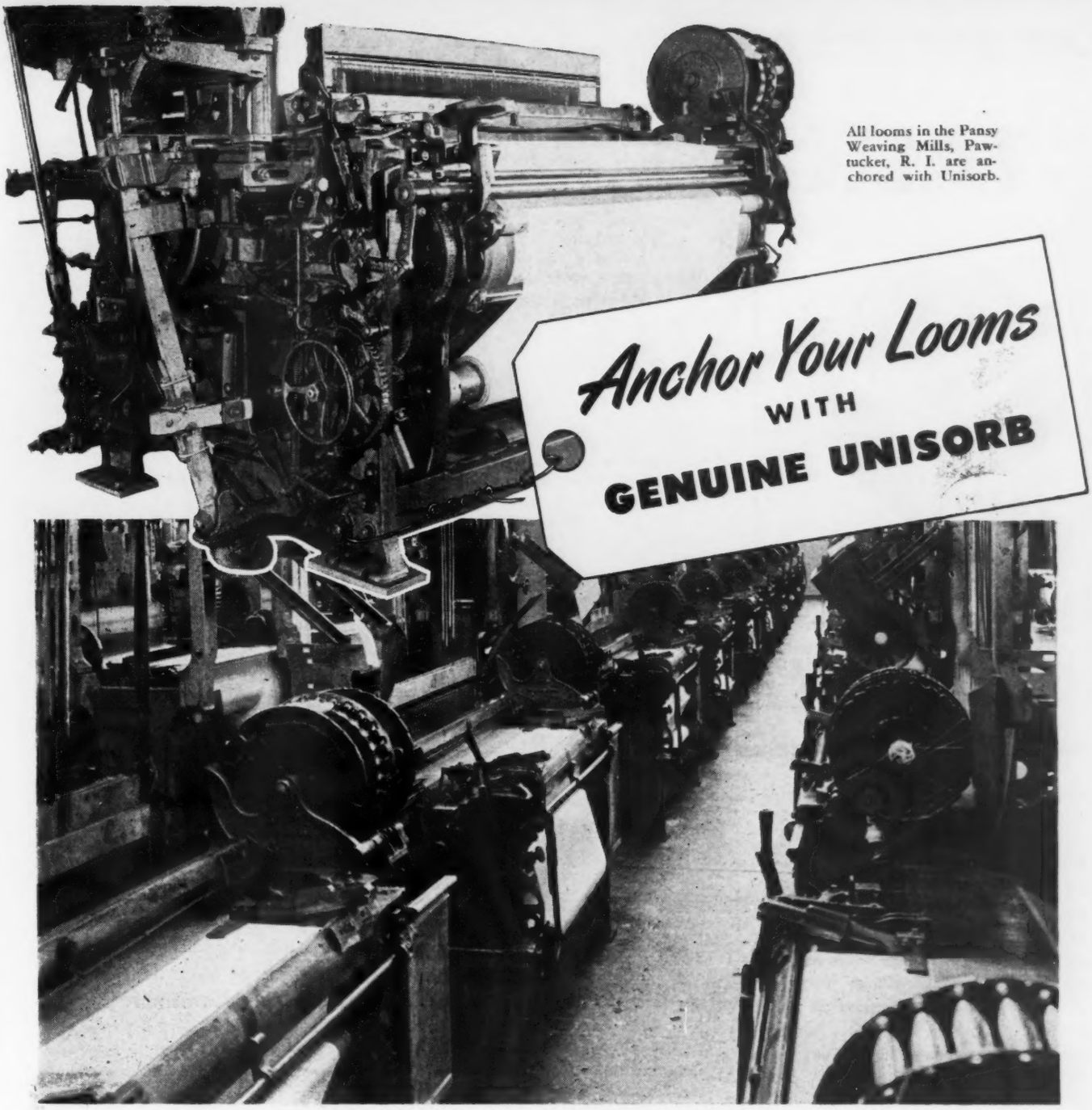

All looms in the Pansy Weaving Mills, Pawtucket, R. I. are anchored with Unisorb.

AN EASY WAY TO LOWER LOOM MAINTENANCE COSTS

THE Pansy Weaving Mills of Pawtucket, R. I., has anchored all of its looms with Unisorb. Mr. N. Pansy says:

"We are extremely pleased with the results of this installation. We wondered at first whether Unisorb would hold looms to a concrete floor without lag screws, but find that it does the job satisfactorily. The vibration and shock of the looms have been reduced tremendously, and we are confident that our cost of machine maintenance will be greatly reduced. We highly recommend the use of Unisorb for all textile machinery installations."

The simple, quick, inexpensive way to anchor your looms is to cushion-mount them on Unisorb. A special cement securely binds the Unisorb to the machine feet and floor, and permanent set prevents any possible riding of the loom.

Send for samples and complete information.

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tion by a single-thread lock screw on one end and a step flange on the other.

Plastic Hosiery Carrier

A hosiery carrier reported to combine light weight (6 lb., 10 oz.), elimination of rough spots, and durable utility has been announced by the The Formica Insulation Co., Cincinnati. A center "bridge" is said to prevent slipping or sliding out of fine hosiery if the carrier becomes off-balance. A coupon operations card carrier is provided. Dimensions are: 36 in. long, 4¼ in. wide, and 15 in. deep.

Air Filter

Agitair FM air filter, announced by Air Devices, Inc., 17 East 42nd St., New York 17, consists of layers of expanded metal said to be so disposed as to induce turbulent cyclonic action of air, creating a centrifugal wiping action against viscous surfaces. The filter is reported to perform efficiently at an approach velocity of 432 f.p.m., handling 1,200 c.f.m. through a 20x20-in. panel.

Hand Magnifier

A hand magnifier with a magnification of 2½ times and with a lens 3½ in. wide has been announced by Edroy Products Co., 480 Lexington Ave., New York 17. The lens, which is said to give accurate vision from edge to edge, folds into the handle when not in use.

Infra-Red Industrial Lamps

Three new infra-red industrial lamps announced by General Electric Co., Lamp Dept., Nela Park, Cleveland, are available in 250-, 375-, and 500-watt sizes. The two smaller lamps, designed especially for use in open reflector ovens, have medium skirted bases and 5-in. light-center lengths. The 500-watt lamp is equipped with medium bipost base and 6-in. flexible leads.

Thermal Limit Switch

A new thermocouple-actuated limit switch has been announced by Manning, Maxwell & Moore, Inc., Bridgeport, Conn. If the high limit temperature is reached, the device will stop the apparatus, sound an alarm, or light a light, or will perform all of these functions at the same time, if desired, it is claimed. The device will "fail safe" in case of burning off or breaking of thermocouple, failure of power supply, tube, or mercury switch, it is said.

Fluorescent Lamps

A complete line of fluorescent lamps is now available in the 4500-white color, it has been announced by General Electric Co., Lamp Dept., Nela Park, Cleveland. The new color has characteristics which are a balance between the present white and the daylight colors, G. E. lighting engineers say.

Corrosion-Resistant Pail

A new pail designed for use where highly corrosive liquids are encountered and where metallic contamination must be avoided, has been announced by Allcraft Mfg. Co., 235 Bridge St., Cambridge, Mass. Made of solid Inconel with Monel chime, ears, and handle, it is of all-welded construction. The pail is available in four sizes: 3, 3½, 4, and 5 gal.

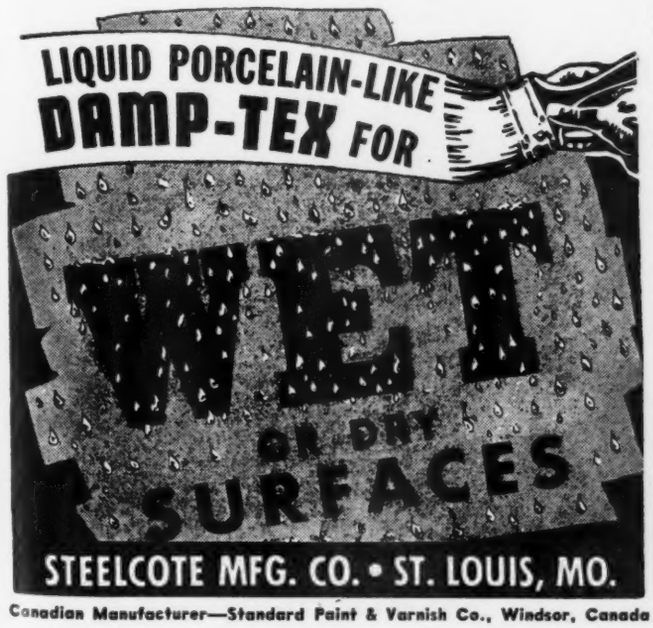
New Flat Metallic Filaments Are Laminated

FASHION'S NEED for lamé or metallic yarns and commercial production of new, tarnish-proof types have synchronized, and fabrics with bright metallic decoration, as shown in the gown pictured, are much in evidence in current high-style showings. The yarn is made by Dobeckmun Co., Cleveland, Ohio, developed in collaboration with Eastman Kodak Co., and the Aluminum Co. of America. It is a fine aluminum ribbon sandwiched between coatings of plastic film which protect the surface. For silver tones, the plastic is clear and transparent; for gold or copper tones, the plastic is suitably tinted and the metallic glint of the aluminum shining through does the rest. The yarn comes in two widths, 1/64 and 1/32 in.; and in two thicknesses, 22/1000 and 32/1000. It runs 4,600 to 11,000 yd. per lb. It is available as a round thread when twisted about a suitable core yarn. Goodall Fabrics, Cohn-Hall-Marx, Kemper Fabrics, and Duchess Fabrics are experimenting with fabrics "shot with metal," and Hafner Associates, in their recent style show at the Ritz-Carlton, New York, featured lamé in much of their offering for formal wear.

DON'T SWEAT OVER WET PLANT DETERIORATION ...RUST OR FUNGUS

STOP THEM WITH AMAZING DAMP-TEX ENAMEL

The Damp-Tex system of painting stops rot, rust, bacteria and fungus growth. Puts a porcelain-like finish on wet or dry wood, metal, concrete and plaster with equal ease and efficiency. Damp-Tex resists steam, 2% caustic solution and lactic acid. Comes in white and colors. Used in over 4,000 plants. Send for details of our trial offer.



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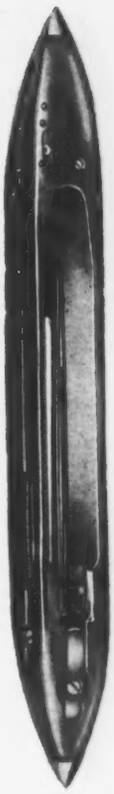
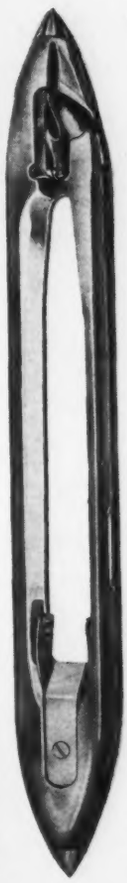
Fibre Clad for Every Fabric

Continuous Research

has brought our Fibre-Clad Shuttles to unexcelled perfection for all weaves and in every type loom.





Originally a development for silk and rayon only, it has now been designed for improved shuttle performance on woollens, worsteds, cottons and synthetics.

Inquire about our latest developments **–STEHIDE–** for super strength and performance.

Ask for our representative and receive detailed information.

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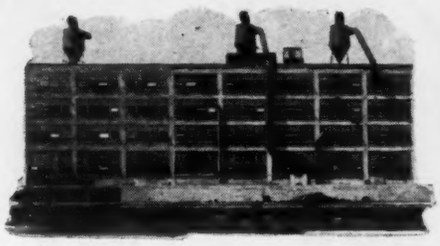

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Fast Delivery Service of the distributor — available 24 hours a day in emergencies—enable the manufacturer to maintain

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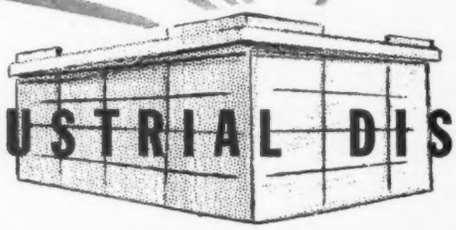

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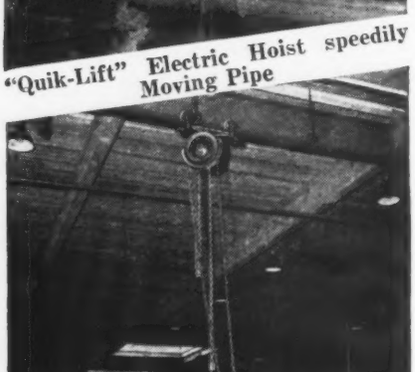

Model "YC" Spur Geared Hoist Moving Large Truck Motor

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Holland Making Good

TEXTILE RECOVERY

HIGHLIGHTS: *Textile production ranges 25 to 200% of the 1938-39 rate—Wool blankets are third over prewar rate, combed yarns twice—Imitation velvets and horsehair linings lag—Rayon output makes strides.*

HOLLAND'S TEXTILE INDUSTRY is well on its way to recovery, and there is every reason to believe that the many difficulties it still is facing will be successfully overcome. Cotton and wool production estimates for 1946 and production figures for the period July 1, 1938 to June 30, 1939 are given in adjoining table.

For the present, the textile industry is not able to meet the huge demands of the people who are in urgent need of new clothing. The principal factors holding back recovery are: First, the unavoidable government policy to set aside part of the production for export to maintain the country's dollar position; and second, the prolonged coal shortage. In addition, textile producers are faced with a serious lack of skilled labor.

The raw material position is another factor hampering production. Almost all of the raw material needed has to be imported, except flax for linen which Holland grows herself.

The cotton industry in Twente—industrial district in Eastern Holland—is easily the most important both to the domestic and foreign market. Before the war its spinning mills produced about 80% of the yarn processed by its weaving mills; the other 20% is imported. About 10% of these spinning mills were destroyed during the war, and new machinery and plant parts must be obtained from England or Switzerland.

Wool cloth production has been rising constantly since last August. The monthly output now is about 2,275,000 sq. yd. In contrast to prewar years when wool-cloth exports were of great importance, very little of the present production is being sent out of the country. The Government Textile Office set the following limits on exports during the first quarter of 1946: Fabrics 6% of production; blankets 2%, yarns 6%, carpets 30%, imitation velvet 30%, and horsehair linings 6%.

Restoration of rayon plants is proceeding vigorously and the AKU plant at Ede is now producing at about 75% of its prewar capacity. It is anticipated that a considerable portion of the domestic rayon needs can be satisfied after alloting a very important portion for export. The Dutch rayon industry expects to find an important outlet for its products in the auto-tire plant to be built shortly in The Hague by the new Goodrich-Vredestein combine.

Textile Production in Holland, Before and After the War

	1938–9 Production	1946 Production		1946 Exports	
	Units	Units	Percentage of prewar	Units	Percentage of current production
WOOL DIVISION:					
Wool cloth	38,000 sq. yd.	31,000	78%	1,800	6%
Blankets	900,000 pieces	1,197,000	133%	27,000	2¼%
Knitting yarns	2,300 met.tons	2,000	87%	200	10%
Carpets	7,200,000 sq. yd.	1,800,000	25%	680,000	38%
Imit. velvet	3,600,000 sq. yd.	900,000	25%	340,000	38%
Horsehair linings	2,400,000 sq. yd.	950,000	40%	60,000	6¼%
Other linings	270 met. tons	148	55%	99	66⅔%
COTTON DIVISION:					
Carded yarns	67,500 met. tons	39,000	58%	7,000	18%
Combed yarns	1,700 met. tons	3,400	200%	2,085	29¾%

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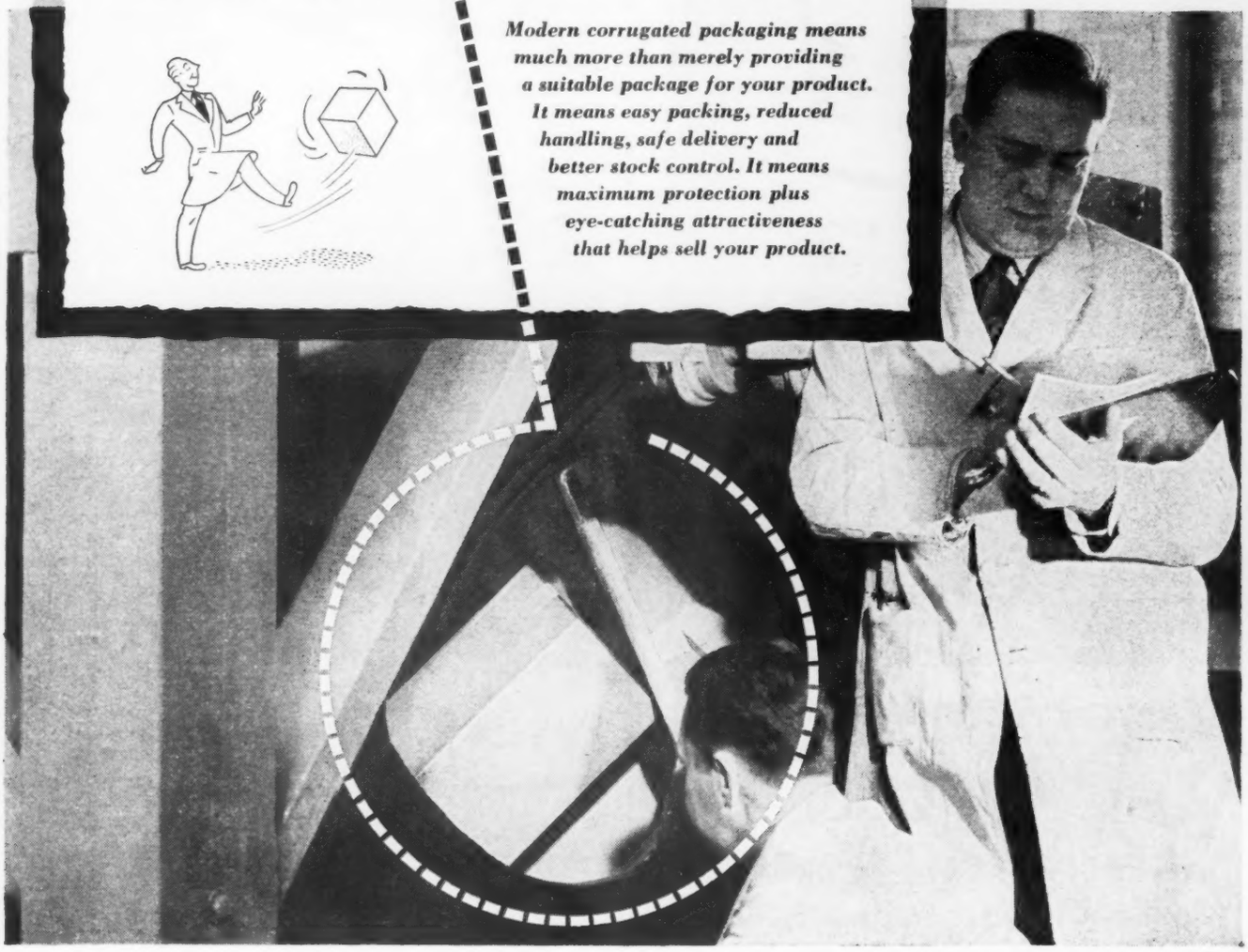

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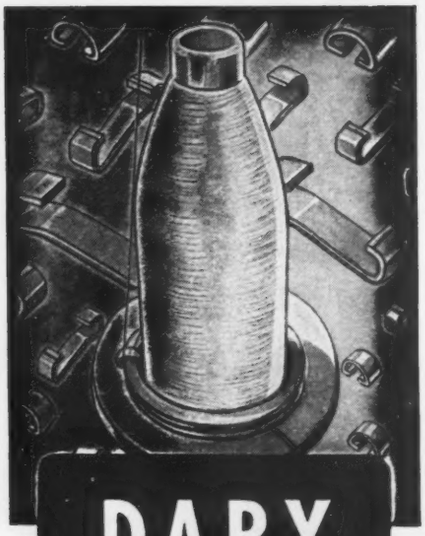

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DISLOCATIONS Blamed For Textile Shortages

HIGHLIGHTS: *Textile production high, editors say in nation-wide broadcast, but industry is prevented from making many fabrics it should—Some corrective steps being taken—Free enterprise seen as solution.*

Left to right, C. W. Bendigo, editor of TEXTILE WORLD, David Clark, editor of Textile Bulletin; Winston Burdett, CBS Washington correspondent; Ben Gordon, editor of Variety Store edition of Chain Store Age; and Dorothy Stote, editor of Infants' and Children's Review as they appeared during nation-wide broadcast last month to explain textile shortages to radio listeners of the CBS program "Open Hearing."

ARTIFICIAL RESTRAINTS forcing textile production into unnatural channels are responsible for the so-called textile shortages in the garment field, C. W. Bendigo, editor of TEXTILE WORLD stated last month during a nation-wide Columbia Broadcasting Co. program "Open Hearing," conducted by Columbia's Washington correspondent, Winston Burdett.

This view was shared by three other editors, also members of the Associated Business Papers, during the broadcast: David Clark, editor of *Textile Bulletin*; Dorothy Stote, editor of *Infants' and Children's Review*; and Ben Gordon, editor of *Variety Store* edition of *Chain Store Age*.

On some other points, the two editors representing the textile industry disagreed with the other two editors, such as on responsibility for production of low-cost textiles. Mr. Bendigo took the position that textile mills often did not know the end use to which their fabrics were being put; and that they manufactured, as far as they could, those fabrics which they were best able to produce, while recognizing that prices were not permitted to reflect what consumers really wanted. Mr. Clark explained the situation of mills having ceilings set for them based on cotton priced at 3¢ a pound less than mills were paying at the time.

Production figures looked good, Mr. Bendigo brought out, with current total textile-fiber consumption almost half again as high as in 1939. Mrs. Stote and Mr. Gordon stated that stores were finding customers more critical of clothing being offered and that overpriced merchandise was beginning to pile up. General impression was that during the first half of 1947, staple fabrics and garments would be in good supply, although Mr. Bendigo pointed out that industrial uses of fabrics and exports would affect the supplies of textiles available to the general public. All the editors agreed that free enterprise could correct the situation, if permitted to act.

Be sure your Maintenance Man has a complete set of these Scott Tester Data Sheets. Previous sheets sent free upon request.

MAINTENANCE DATA SHEET NO. 5

GEAR BOX LUBRICATION

Models DH, J, L-1, L-2, L-7, Q, and U: oil gear box periodically with a small quantity of SAE 30. Oil holes are provided at all necessary points. The friction side of the clutch must not be lubricated. If there is slippage, the pulling clamp will not return properly to the starting position. Remedy: wash the clutch face with gasoline or similar grease solvent. The enclosed gear attachment on the right side of the gear box should be inspected periodically and be kept packed with good grade gear lubricant.

Models X, X-2, X-3, X-4, L-3, L-4, L-5, and L-6: Keep gear box filled to proper level with SAE 40. If so equipped, check the multiple-speed box periodically and oil with SAE 30 as required.

Models L-3, L-4, L-5, and L-6 have a dash pot to control the action of the pulling clamp. A small quantity of Neatsfoot Oil should be poured through the tube of this dash pot about every six months.

IP-2 Tensilgraph and IP-2 Serigraph: oil gear box with a small quantity of SAE 10 regularly. Do not use oil excessively on the sliding shaft in the box.

IP-4 Tensilgraph: the gear box requires little attention; add SAE 50 on the worm reduction unit at infrequent intervals as necessary and oil the adjacent moving parts with a few drops of SAE 30. IP-4 Serigraph: maintain proper level in the gear box by adding SAE 20 periodically.

IP-2 and X-5 motors have gear reduction units, to be lubricated every six months with good quality worm gear lubricant.

Where V-belts are present care should be taken to avoid too great tension. Belt manufacturers will supply detailed instructions on operation and care.

The many Scott Testers supply the needs of testing textiles, rubber, wire, paper, etc., up to 1 ton tensile.

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Drying Printed Textiles?

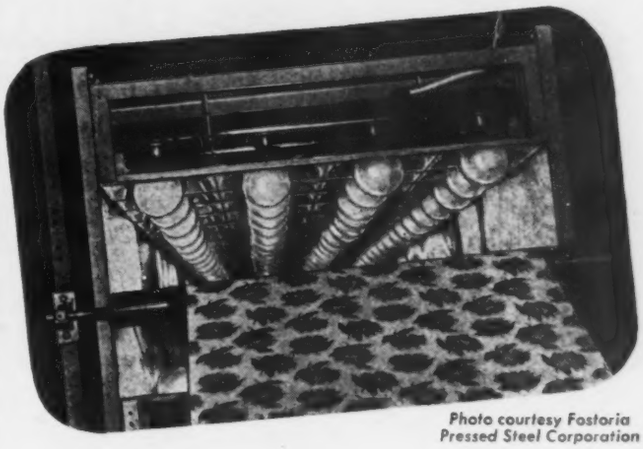

Photo courtesy Fostoria Pressed Steel Corporation

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All the way down the line, Infra-Red is making records like that in drying, preheating and evaporation. 30% to 40% faster production in preshrinking cloth. Lower costs, fewer rejects in drying rayons and cellulose acetate, in removing salt solution from duck.

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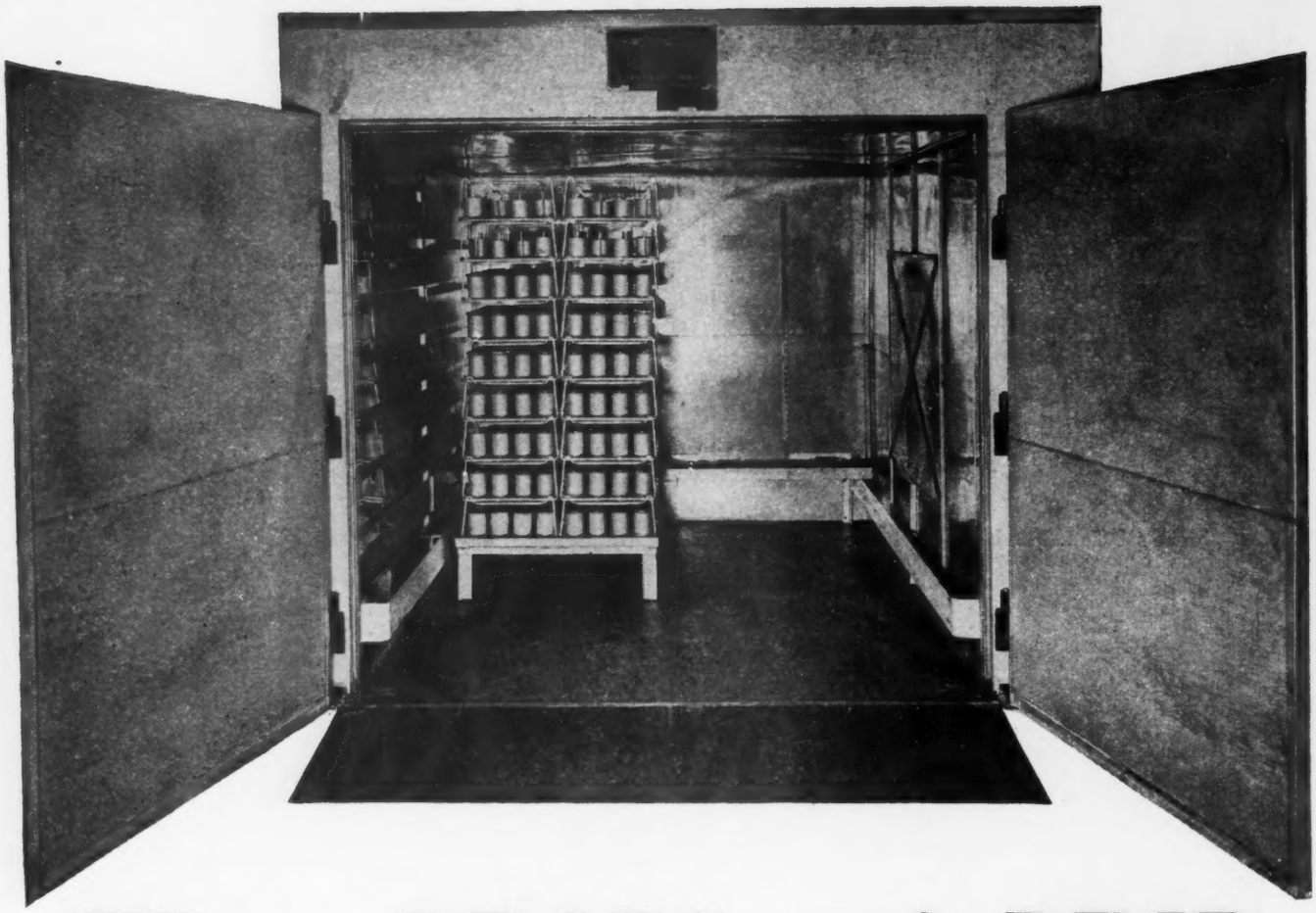

Where DROPS can't DRIP

Condensate is a trouble-maker . . . when it falls from the ceiling of a yarn conditioner.

But drops can do no harm on the *walls.*

In the "H-W" conditioner pictured above, the ceiling is constantly maintained at a higher temperature than the other inside surfaces. Any condensation that may occur, forms on the walls.

A product of *The Industrial Dryer Corporation,* Stamford, Conn., the "H-W" conditioner is widely used in the silk, rayon, woolen and worsted industries. While most twist-setting conditioners provide automatic control of temperature and humidity, this one does even more: it controls *time of operation* as well.

Throwsters operating this equipment have no worries about rust or corrosion, either. With rustproof Monel lining on walls and ceiling, and with a solid plate of tough Lukens nickel-clad steel for the floor, there's dependable protection against corrosive conditions and humid atmospheres.

Monel* has served the textile industry for more than a quarter of a century. It is preferred metal for all types of dyeing equipment handling direct and vat colors. It is readily fabricated, and retains its essential characteristics throughout its service life, whether in contact with salt, acids, alkalies or dye liquors.

For detailed information on strength and ductility, working properties, resistance to various types of corrosion and other data, we invite you to send for Technical Bulletin T-5, *Engineering Properties of Monel.* Your copy is ready for mailing. A request on your business letterhead brings it to your desk. The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

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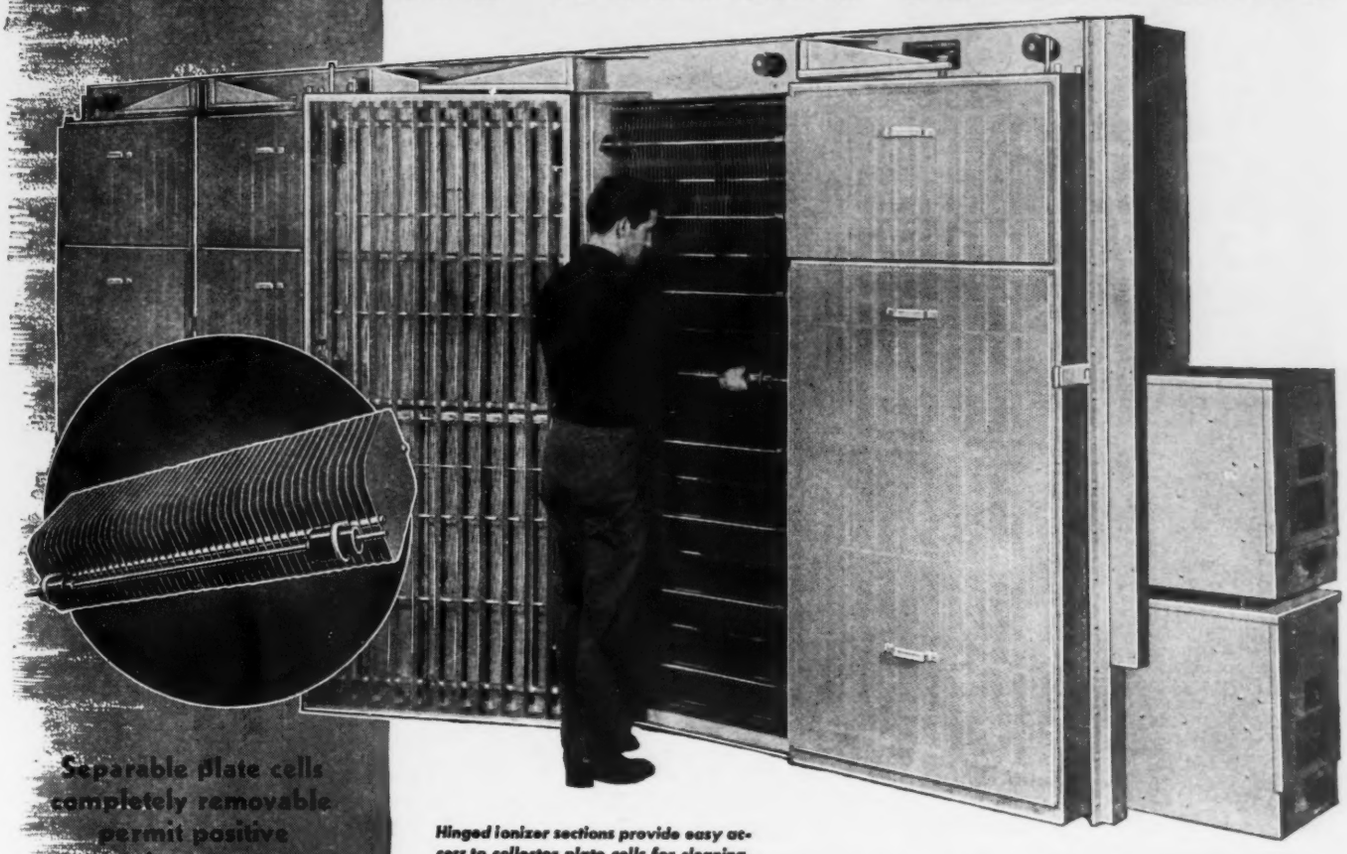

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News of the month

Raw Silk in the Headlines. The raw silk situation has had a flare-up that brought a War Department investigation. The U. S. Commercial Co. a creature of the government, has been doling out the bales on arrival in this country in a manner which has met general criticism from the trade. At the last offering (7,766 bales on Aug 4) only 2,260 were disposed of, and other bids (presumably below some arbitrary figure arbitrarily set up by USCC) were rejected. The sealed-bid method adopted by USCC has griped the trade because such bidding is in the dark. Open auction is said to be the trade preference. Peter Magagna, a Pennsylvania silk throwster now attached to General MacArthur's organization as an economist, recommended that the selling of Jap silk be turned over to the New York Commodity Exchange. Now he is being investigated. The Department of Commerce is said to be making a survey of silk users, asking them for estimates of how much silk they could use if the price was in one of three brackets—$3.00, $6.00, and $10.00. They seem to have overlooked the fact that recent sales have been averaging around $12.00. The whole problem of silk disposal is now well up in the clouds over Washington.

TEXTILE WORLD, in conformity with other McGraw-Hill magazines, has adopted a standard 8¼ x 11¼ in. page size starting with this September issue. We regret that the paper shortage makes this change necessary in the course of the year. We should have preferred, for your convenience if you bind the year's issues, that the change be made in January. However, your binder will, we are sure, be as willing and able to meet the situation as ours is. The issues September through December can be filled in at the stitching edge so as to equal the remainder of the year in width. The top and bottom margins of the first eight months are sufficiently wide to allow for trimming to the new length. We trust that this temporary inconvenience will be more than equalized by the advantage of a standardized size henceforth. The saving in paper will permit us to give you more pages in the book than otherwise.

Textile Calendar

Independent Hosiery Manufacturers Association, early fall get-together, Cedarbrook Country Club, Philadelphia, Sept. 27, 1946.

Southern Combed Yarn Spinners Association, 21st annual meeting Carlton Yarn Mills Club House, Cherryville, N. C., Sept. 27, 1946.

Packaging Machinery Manufacturers Institute, 14th annual meeting, Shawnee Country Club, Shawnee-on-Delaware, Pa., Sept. 29 to Oct. 1, 1946.

ASME, fall meeting, Hotel Statler, Boston, Mass, Sept. 30 to Oct. 3, 1946.

Second National Electronics Conference, Edgewater Beach Hotel, Chicago, Oct. 3 to 5, 1946.

American Gas Association, 28th annual convention and exhibition, The Auditorium, Atlantic City, N. J., Oct. 7 to 11, 1946.

National Association of Cotton Manufacturers, annual meeting, Copley-Plaza Hotel, Boston, Mass., Oct. 10, 1946.

Southern Hosiery Manufacturers Association, annual meeting, Grove Park Inn, Asheville, N. C., Oct. 17 to 19, 1946.

AATCC, New York Section, Swiss Chalet, Rochelle Park, N. J., Oct. 18 and Nov. 22, 1946.

Cotton-Textile Institute, 20th annual meeting, Waldorf-Astoria, New York, Oct. 23 and 24, 1946.

AATCC, Piedmont Section, Charlotte, N. C., Oct. 26, 1946.

Textile Research Institute, 17th annual meeting, Waldorf-Astoria, New York, Nov. 8, 1946.

Seventeenth National Exposition of Power & Mechanical Engineering, Grand Central Palace, New York, Dec. 2 to 7, 1946.

AATCC, Silver Jubilee Convention, Hotel Statler, Boston, Mass., Dec. 12 to 14, 1946.

Seventh International Heating & Ventilating Exposition, Lakeside Hall, Cleveland, Ohio, Jan. 27 to 31, 1947.

Knitting Arts Exhibiion, Convention Hall, Atlantic City, N. J., Apr. 29 to May 2, 1947.

National Association of Hosiery Manufacturers, annual meeting, Hotel Claridge, Atlantic City, N. J., Apr. 28, 1947.

Hosiery Industry Conference, Hotel Claridge, Atlantic City, N. J., Apr. 28 and 29, 1947.

Second National Plastic Exposition, Coliseum, Chicago, May 5 to 11, 1947.

NACM Meets Oct. 10. The annual meeting of the National Association of Cotton Manufacturers will be held at the Copley-Plaza, Boston, on Thursday, Oct. 10. Present plans are for an informal luncheon at noon, followed by a business session and a speaking program in the afternoon, and a banquet in the evening.

17th Annual Meeting of TRI. Annual meeting of the Textile Research Institute has been set for Friday, Nov. 8, 1946, at Waldorf-Astoria Hotel, New York. The theme is to be "Production Progress Through Textile Research."

Fashion Promotion for Cotton. This fall the Fashion Department of the Cotton-Textile Institute will concen-

(Continued on page 272)

For more efficient wet processing of Cotton, Wool, Rayon, Nylon—

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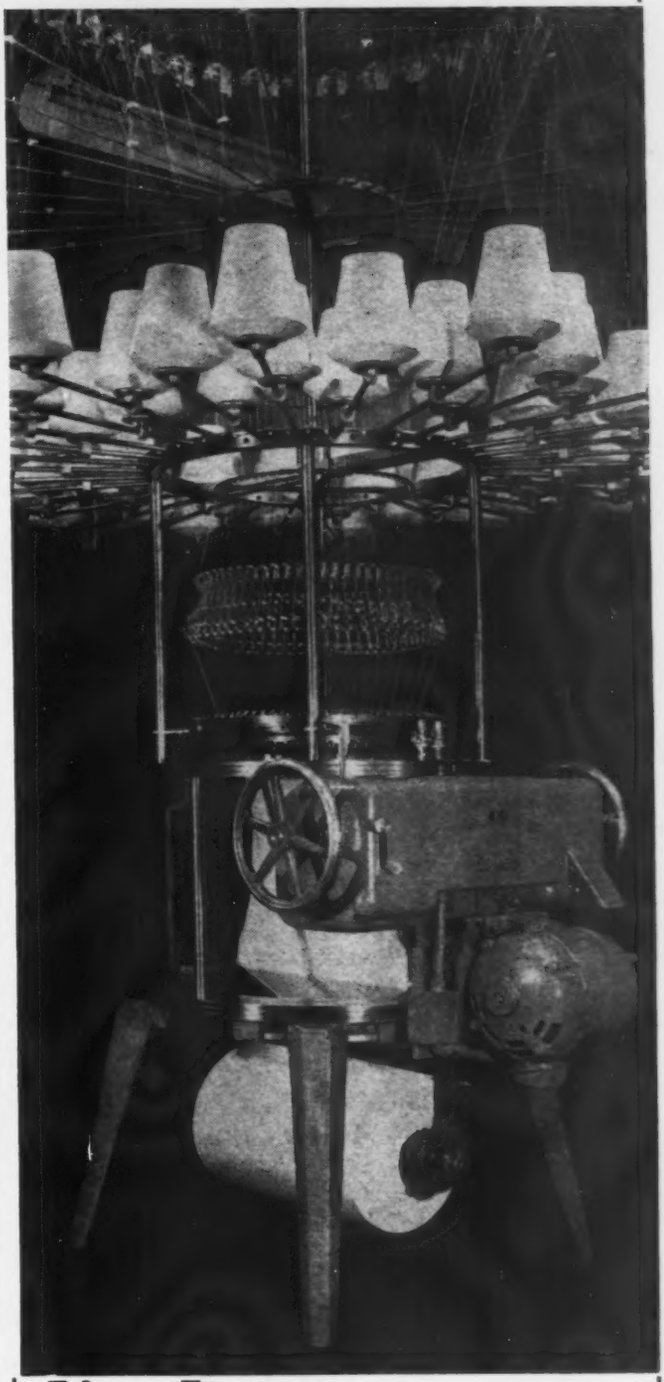

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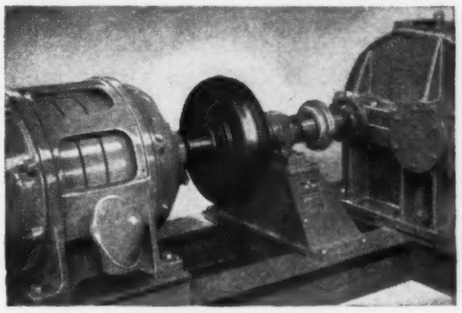

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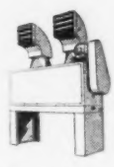
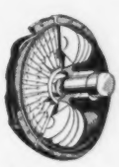
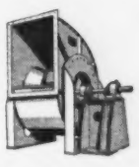


Heating Equipment

Ventilating Equipment



Gyrol Fluid Drive



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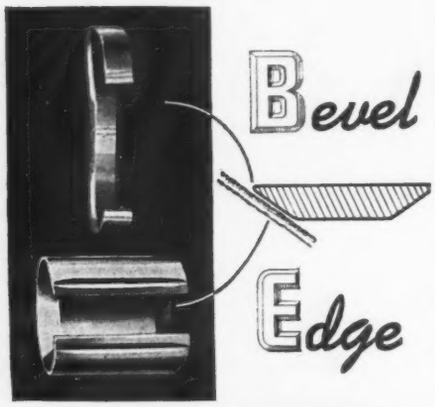
4 Years of War-Stimulated Improvement—On Top of 61 Years of Engineering Development

Different and Better!



THE *Modern* TRAVELER

Promotes smoother running
Safeguards quality

Anti-friction rings — U. S. "Bevel Edge" anti-friction travelers, both are especially timely because they promote maximum production from existing spinning and twisting machinery. Some of the direct benefits from the Bevel Edge travelers are stated by users as follows:

1. Less loading up of travelers on cotton.
2. Less fly waste on woolen.
3. Minimizes split ends on rayon, and silk.
4. Much lower end breakage—frequently 8 to 10 fewer per hour.
5. More uniform tension—more uniform yarn.

NOTE: Selection of the correct size and weight, in which our men assist, is extremely important to assure MAXIMUM results.

U. S. Travelers are made and stocked in ALL styles.

DEPENDABLE DELIVERY—
PROMPT SERVICE CALLS

U. S. RING TRAVELER CO.
AMOS M. BOWEN, President & Treasurer
Providence, Rhode Island

"U. S." Men give you Prompt Service!

W. P. VAUGHAN—W. H. ROSE—Greenville, S. C.—Box 792—Phone 3031
O. B. LAND—Athens, Ga.—Box 1187 Phone 478
T. L. MAYNARD—Belmont, N. C.—Box 456—Phone 115
M. L. BOLTON—West Philadelphia—Box 7234—Trinity 1438
H. R. FISHER—Concord, N. C.—Box 83—Phone 8988
C. W. SMITH—H. J. SMITH—L. H. Mellor, Jr., Providence—Gaspee 0100

trate on a specialized educational and promotional plan to service schools, colleges, home economic groups, stores, and the press. *Cotton* News, fashion clip sheet, has been redesigned with emphasis placed on fashion photographs and with descriptive, informative stories. A traveling display is being designed which will be a feature of store shows, conventions, special events, etc.

To License Elastic-Top Hosiery. Licenses for manufacture and sale of certain types of patented elastic-top circular plain-knit, non-rib hosiery are made available by a new corporation, The Davis Co., 603 Chattanooga Bank Bldg., Chattanooga 2, Tenn. The licenses will cover both long- and short-leg hosiery for men, women, and children. President is Robert E. Davis, also president of W. B. Davis & Son, Fort Payne, Ala. Charles A. Noone, an attorney of Chattanooga, is secretary-treasurer. Leon B. Wilcox, on leave from Interwoven Stocking Co., New Brunswick, N. J., is technical adviser. One uniform, comprehensive license, at a royalty of 2¢ per dozen pairs, will cover the following fifteen Davis, Getaz, and Gastrich United States patents: 2,054,217, 2,067,486, 2,161,250, 2,168,869, 2,183,862, 2,191,456, 2,201,716, 2,215,286, 2,223,719, 2,230,402, 2,230,403, 2,344,350, 2,306,207, 2,306,246, 2,357,506.

Those OPA Prices. After September, monthly cotton-textile prices will be based by OPA on the average of raw cotton prices in a two-week period, instead of a monthly average of market prices. For example, Sept. 8 to 22 cotton prices will be used to figure October textile prices, and so on. The decision was reached after a series of conferences with cotton-textile industry representatives who urged that prices be based on cotton costs closer to the date the prices go into effect. Under the newly revised price control law, prices for major items of cotton textiles are required to cover either the current market price or parity price of raw cotton, whichever is higher,

WHY THIS ISSUE IS SO LATE. Strikes affecting delivery of supplies to our printer have seriously delayed your receiving this issue. We regret the delay, which was entirely beyond our control since the strikes were not directed either at our printers or ourselves. We have reason to believe that subsequent issues will reach you more promptly.

BELDING CORTICELLI
THREADS • FABRICS • HOSIERY • LINGERIE
BELDING HEMINWAY CO.
119 WEST 40th ST., NEW YORK 18, N. Y.
BELDING CORTICELLI
THREADS • FABRICS • HOSIERY • LINGERIE
BELDING HEMINWAY CO.
119 WEST 40th ST., NEW YORK 18, N. Y.

The old (above) and the new (below) version of the Belding-Heminway-Corticelli kitten. Originally used by Corticelli, the kitten has been the identifying trademark of that company's advertising for the last 58 years. The kitten has been "modernized" better to match the company's newest advertising campaign.

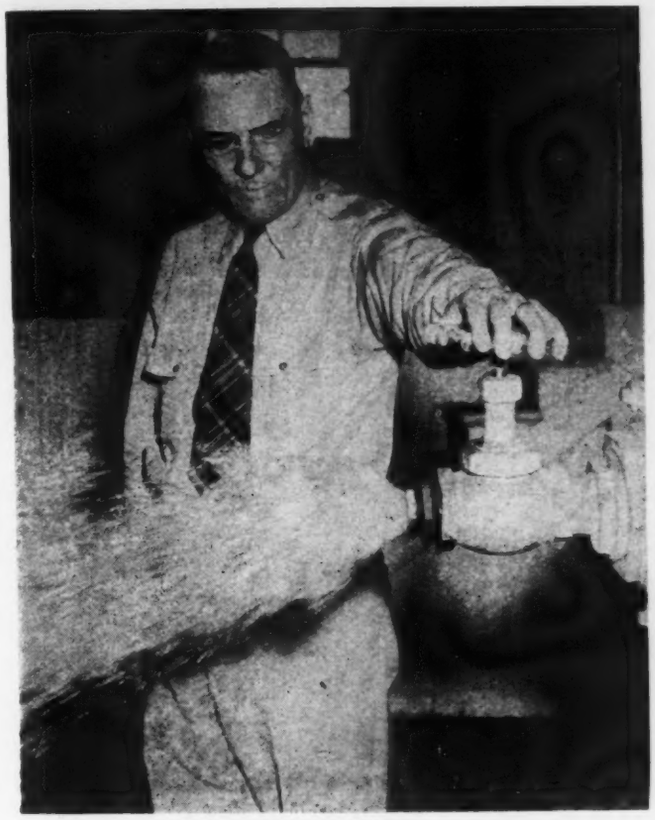
plus an allowance for conversion costs and a reasonable profit. Cotton-textile prices were revised on Aug. 5 to conform to this requirement, as up to that time only the parity price of cotton had to be considered. The law necessitates periodic revision of textile prices.

Exempt From Royalty. Hemphill Co., Pawtucket, R. I., announces that the Banner-Lastic Top, produced on its wrap-reverse hosiery machines, and incorporating rubber in each course, is available to owners of Hemphill machines free of royalty as neither product, machine, nor method, according to the management, infringes any valid claim of any U. S. or Canadian patent not owned by the company.

C.T.I. Meets Oct. 23 and 24. The 20th anniversary of the founding of the Cotton-Textile Institute will be celebrated at the forthcoming annual meeting to be held at the Waldorf-Astoria Hotel, New York, Oct. 23, 24.

Selecting Blues for Army. Restoration of peacetime authorization of blue uniforms for winter, off-post wear for personnel of the United States Army is planned. Authorization for the blue uniform, hitherto for officer personnel only, is to be extended through the ranks. However, this plan will not be executed until such time as the present shortages are erased from the market and when Army procurement of the necessary materials will not come

(Continued on page 276)



TEXTILE MANUFACTURERS

—ASK US WHAT PENSACOLA CAN OFFER YOUR INDUSTRY

Progressive Pensacola has many special advantages worth investigating. Ample supplies of soft water, 99.98% pure . . . proximity to cotton and sizing-starch producing areas and to major U. S. and Latin-American markets . . . low construction and maintenance costs . . . low taxes . . . inexpensive power, natural gas and coal . . . excellent port, rail, air and highway facilities . . . and cooperative labor — all point clearly to the fact that PEN$ACOLA I$ THE $POT!

Write today for information, outlining your requirements. Your letter will be held in strict confidence.

INDUSTRIAL DEVELOPMENT DIVISION . . .
MUNICIPAL ADVERTISING BOARD
PENSACOLA Florida

FROM THE CATALOG OF BARRETT BASIC CHEMICALS

CRESOL U. S. P.

A liquid aromatic coal-tar chemical, acidic in nature. Not less than 90% distills between 195° C and 205°C.

Empirical Formula	$CH_3C_6H_4OH$
Molecular Weight	108.13
Specific Gravity	1.030 to 1.036 @ 25°C

CRESYLIC ACID

A mixture of tar acids containing cresols. Offered in several grades to meet customers' requirements.

FOR THE TEXTILE INDUSTRY

These chemicals are widely used in the mildew-proofing of fabrics and as penetrating or leveling agents in dyeing. They also prevent molding of glues.

In the process of mercerizing fabrics, the addition of cresol and cyclohexanol to the caustic soda lye, imparts better luster and elasticity to the fabric and results in a shorter period of operation. Other Barrett basic chemicals for the textile industry include:

BENZOL
TOLUOL
XYLOL
CUMAR*
CYCLOHEXANOL
DIBUTYL PHTHALATE
PYRIDINE

For complete information, phone, wire or write—

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Barrett

Trade-mark Reg. U. S. Pat. Off.

ONE OF AMERICA'S GREAT BASIC BUSINESSES

The Case of the Needed $100,000

It was a chance of a lifetime! An opportunity to buy a business they had dreamed about!

But to the young man and his wife . . . burning midnight oil, drinking black coffee to stay awake . . . it looked like an opportunity that could never come true.

Again and again, they went painfully over their ledgers. Adding cold, hard figures. Working far into the gray hours of morning. But no matter how carefully they rearranged the facts – *one fact remained.* They needed $100,000 additional capital—$100,000 over and above the $25,000 they themselves could provide.

To seek for a partner would mean sharing the business . . . sharing the profits. What could they do?

* * * *

Several days later, this couple bought the business outright—became sole owners. For JAMES TALCOTT, INC., with characteristic liberality had not only advanced them the $100,000, but had shown them a way to repay this money out of earnings in less than two years.

Because it is the policy of JAMES TALCOTT, INC. to *work out* a method of handling any reasonable deal, this man and his wife have a prosperous, independent future . . . running their business without interference, and without sharing its profits.

Why James Talcott, Inc. Is America's Liberal Factor

Almost a century of experience in all types of financing and factoring, involving over one billion dollars, has shown us how to solve any business financing problem, especially where liberality is important. Such an understanding viewpoint means more profits to Talcott clients.

ACCOUNTS RECEIVABLE FINANCED WITH OR WITHOUT NOTIFICATION • CREDIT RISKS ASSUMED • DROP SHIPMENTS FINANCED • PURCHASES GUARANTEED LOANS MADE ON MERCHANDISE, PLANTS AND MACHINERY INSTALLMENT SALES OF INDUSTRIAL EQUIPMENT FINANCED

JAMES TALCOTT Inc.

Specialists in Financial Planning

225 Fourth Ave., New York 3, N. Y.

Southern Correspondent: CLARENCE KNOWLES, 1734 Candler Bldg., Atlanta 3, Georgia

TRADE MARK REGISTERED

NON-FLUID OIL → IN FIRST

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

PLACE FOR ELIMINATING

SECONDS

NON-FUILD OIL — the modern lubricant—stays in bearings where it belongs and prevents losses from oil-spot "seconds" caused by dripping, leaking oil.

That's one big reason why NON-FLUID OIL is used by seven out of 10 mills. On top of that, it cuts oil and application costs — outlasts liquid oil from three to five times!

NON-FLUID OIL can't creep from roll necks and get on covers of top rolls. Its use prevents saturation and oil rot of roll covers, eliminates blackened yarn.

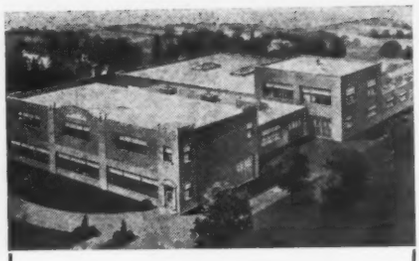
Used on looms, NON-FLUID OIL prevents dripping and spattering from bearings with damage to goods in process and waste of oil.

In carding, spinning, and weave rooms, the no-drip qualities of NON-FLUID OIL eliminate oil creepage and spattering that damages goods in process. Write for descriptive bulletin and testing samples.

Southern District Manager
FALLS L. THOMASON
Charlotte, N. C.

WAREHOUSES:
Chicago, Ill ..... Atlanta, Ga.
St. Louis, Mo. ..... Detroit, Mich.
Providence, R. I...Greenville, S. C.
Charlotte, N. C.
WORKS: Newark, N. J.

NEW YORK & NEW JERSEY LUBRICANT CO.
292 MADISON AVE. NEW YORK 17, N.Y.



MACHINE MANUFACTURING FACILITIES

We have facilities available for manufacturing complete machines, machined parts, tools & fixtures.

In our self-contained and modern plant we have built both complicated and simple mechanisms.

Because of our comparatively low overhead, we shall be glad to accept your estimate of cost as a basis for negotiation.

PORTMAN MACHINE TOOL COMPANY, Inc.

70 Portman Road, New Rochelle, N. Y.

LAZENBY

FILLING WINDERS

Produce Filling of maximum yardage in Cop, Butt and Bobbin form for plain or automatic looms at minimum operating cost and maintenance.

Send us a small supply of your yarn for Test-Wind Report and Catalog.

F. A. LAZENBY & CO.

3106 Elm Ave., Baltimore 11, Md.

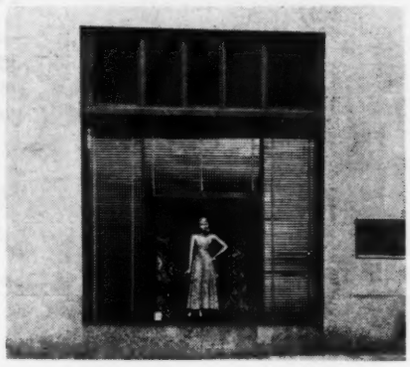
into conflict with civilian needs nor in competition with civilian purchasing. After decision has been reached as to shades of blue and such details as piping and trim, it is planned at some future date that the new blues will be authorized. QM teams are now testing both Army and public reactions to various blues.

Russian Textile Plans. Moscow, USSR (*McGraw-Hill World News*) — According to the current five-year plan, the output of cotton and woolen fabrics in the Soviet Union is scheduled to reach nearly 5,000,000,000 meters in 1950. This means that in the course of five years Soviet textile production is to exceed substantially the pre-war level. To reach this goal, according to Russian press reports, the present production level will have to be nearly trebled. By the end of the present five-year period, all the textile mills that were damaged during the war will be rehabilitated, besides which new cotton mills will be completed and started in Siberia, The Urals, Georgia, Kazakhstan, and the Central Asian republics. The five-year program for the Soviet machine-building industry calls for the production of 3,300,000 spindles and 65,000 looms. Already this year the cotton and woolen mills are expanding their plant by 210,000 spindles and 5,000 looms.

Lumite Ceremonies. Chicopee Mfg. Corp. marked the formal opening of its Lumite Division at Cornelia, Ga., with a program of speeches and music on Aug. 16 at Cornelia. Edgar B. Dunlap was master of ceremonies. Principal address was by John S. Wood, member of Congress from Georgia's 9th district. H. H. Purvis, resident vice-president, put the plant officially to work.

Use Fluorine for Non-Felting Wool. An English patent, No. 578,499, of 1945, covers use of fluorine on wool to give resistance to shrinkage from felting. The process has been performed on wool socks which were first scoured to remove all grease and then treated when dry to the passage of a gas, 25% fluorine 75% nitrogen, flowing 200 cc per min. for 20 min. at room temperature. The optimum anti-felting treatment was found to require 0.4 to 0.7% fluorine based on weight of the wool.

Enemy Patents at Atlanta. The establishment by the Alien Property Custodian of a complete file of enemy patents seized by the Government during the war in the Library of Georgia Tech, Atlanta, Ga., affords the textile industry in that area an opportunity to obtain new ideas in bleaching, dyeing, and other textile processes. The patents may be utilized on a non-exclusive, royalty-free basis under reasonable licensing fees.



PACIFIC MILLS, New York office at 214 Church St., has unveiled new show windows. Each window is equipped with three forest-green Venetian blinds which give flexibility to window decoration. By lowering the blinds on each side to the bottom and bringing the center blind half way down, the main display can be spotlighted in a jewel-box-like setting. When all three are raised, there is the usual full-size window. The blinds can be arranged at three different levels, step-like, to reveal short, medium, and tall mannequins.

Wool Purchase Extended. The Department of Agriculture has extended the program under which the Commodity Credit Corp. offers to purchase domestic wool from Nov. 1, 1946 to Apr. 15, 1947.

CLOTHESLINE made of low-stretch rayon core jacketed with Geon is aiding the housewife, since in this new product the effects of age, sun, rain, light, heat, and cold are greatly resisted. It won't crack even after prolonged exposure to weather and is easily cleaned with a damp cloth. Chemclad, the clothesline shown in this photo, is a product of the Carolina Industrial Plastics Corp., Mount Airy, N. C.. Geon is the polyvinyl chloride plastic of B. F. Goodrich Chemical Co., Cleveland, Ohio. It is mildewproof, does not sag, can be pulled around hooks without cracking, and its bright color allows for high visibility and attractive appearance.

WHEN IT'S A JOHNSON AND BASSETT MULE, WHICH HAS 13 ADVANTAGES OVER RING SPINNING FRAMES AS FOLLOWS: **1.** Up to 50% saving in labor. **2.** Up to 65% saving in H.P. per equal number of spindles. **3.** Up to 50% saving in floor space per equal number of spindles. **4.** Up to 67% saving in investment per comparable capacity. **5.** The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%. **6.** The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning. **7.** It permits inspection of the thread. **8.** It will successfully spin short staple roving which will not hold together on a frame. **9.** Spindle for spindle, it will produce as much yarn as a frame. **10.** Its cost of upkeep is exceptionally low. **11.** The J & B filling package does not require rewinding for an automatic loom. **12.** Changes for spinning different types of yarn on the J & B Mule are easily and quickly made. **13.** Mule bobbins cost less than frame bobbins.

Complete details and prices on request.

JOHNSON & BASSETT, INC.

Founded 1865

WORCESTER, MASSACHUSETTS, U. S. A.

The Lyons Chronometric Hand Tachometer is designed to provide exceptionally precise measurement of constant rotary and linear speeds.

Produced in two types, 0 to 1000 RPM and 0 to 10000 RPM, graduated in 1/5 RPM and 2 RPM subdivisions respectively, the Lyons has an overspeed allowance of 100%, is durable and entirely trustworthy.

BOULIN INSTRUMENT CORPORATION

PORTABLE AND STATIONARY CENTRIFUGAL TACHOMETERS
PORTABLE CHRONOMETRIC AND STROBOSCOPIC TACHOMETERS

65 MADISON AVENUE, NEW YORK, N. Y.

ANNOUNCEMENT

Elastic Top Hosiery License Available

After extensive negotiations a newly organized Corporation, known as The Davis Co., Chattanooga, Tennessee, has been formed to license the entire hosiery industry for the manufacture and sale of circular plain-knit (other than rib) long or short-leg hosiery of every type for men, women, and children, with elastic tops covered by the patents of four inventors listed below.

One uniform comprehensive license, covering the fifteen patents listed below, is offered, applicable alike to all, at the all inclusive royalty rate of 2c per dozen pairs, which will enable the mills to make a variety of elastic tops with elastic selvages.

Savings under the license are estimated at from 15c to 20c per dozen over transfer knitting, depending on the type of machine used, as a knitter operates 8 to 15 machines instead of the usual 3 to 5 machines with transfer knitting.

The effective date of the licenses offered to manufacturers will be September 1, 1946, when royalties will begin to accrue on shipments commencing that date.

Applications for license may be made to:

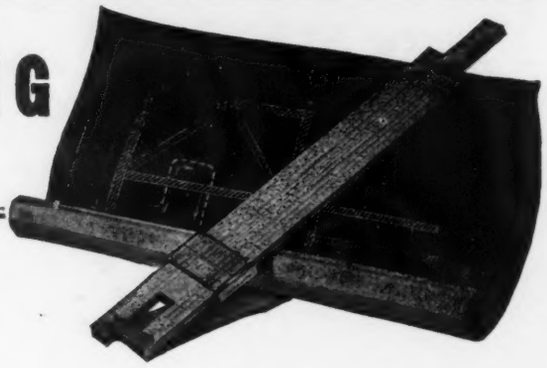
The Davis Company

Suite 603 Chattanooga Bank Bldg.
Chattanooga 2, Tennessee

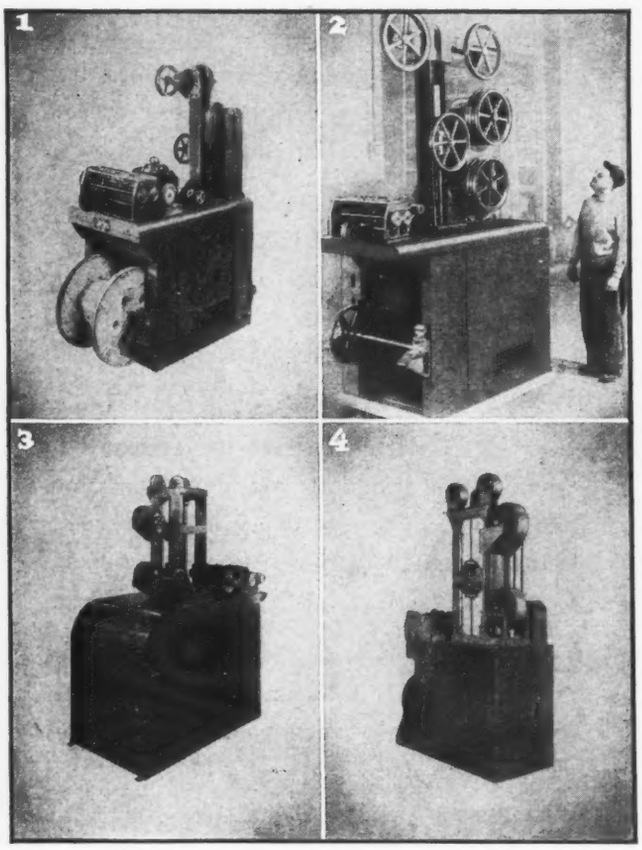
Patents offered for license:

	Number	*Date of Issue*		*Number*	*Date of Issue*
Davis	2,183,862	1/19/39	Getaz	2,054,217	9/15/36
and	2,191,456	2/21/40		2,161,250	6/6/39
Davis, Jr.	2,201,716	5/21/40		2,168,869	8/8/39
	2,215,286	9/17/40		2,230,402	2/4/41
	2,223,719	12/3/40		2,230,403	2/4/41
	2,306,207	12/22/42		2,344,350	3/14/44
	2,306,246	12/22/42			
	2,357,506	9/5/44	Gastrich	2,067,486	1/12/37

OVEN ENGINEERING NEWS



IOE Constant-Tension Windups Now Available for Wide Range of Processing Applications



The coating, impregnating and drying of continuous materials, such as insulated wire, cable, tape, yarn, fabrics and cords, is a task which demands top engineering and machine design skill. One of the most important factors in any coating system is the windup machine, providing the motive power to draw materials through coatings, saturants and drying tower. All **IOE** windups, such as those shown left, are built on the same basic design, yet that design is flexible enough to suit a variety of applications.

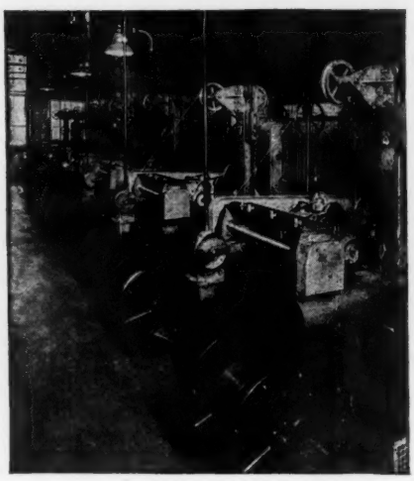
Fig. 1 shows a high-speed, low-tension unit for lacquering, saturating, waxing, respooling and monofilament impregnation. It will handle materials from .010″ to .385″ diameter at speeds up to 1500 feet per minute.

The large machine in Fig. 2 is a heavy-duty extrusion takeup for large diameter cable running at low speeds and high tensions. It handles flexible materials up to 1.50″ diameter at speeds from 25 to 240 feet per minute, with tensions as high as 500 pounds.

The saturating takeup in Fig. 3 is designed for medium speeds and tensions. This machine handles material up to .750″ diameter at tensions up to 100 pounds and speeds from 80 to 480 feet per minute.

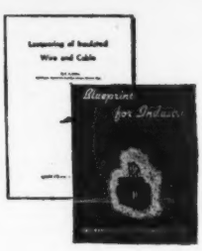
Flat materials such as tape and textiles are handled by the machine in Fig. 4. This particular model is designed for materials up to 6″ wide and .060″ thick, though wider rolls are available. Tension is adjustable over a wide range, and the speed change ratio is 10 to 1.

All machines are available with hydraulic, electric or electronic synchronization, and with traversing mechanisms for wide lay range adjustment. Multiple units handling up to 12 ends simultaneously also are supplied by this company, a good example being the eight-end system shown below, in operation at the Lenz Electric Company of Chicago.



FREE BULLETINS

You may obtain, without charge, full data on windup machines and complete coating systems for continuous materials. Just drop us a line.



(This is No. 21 of a series. Reprints of previous advertisements will be sent free upon request)

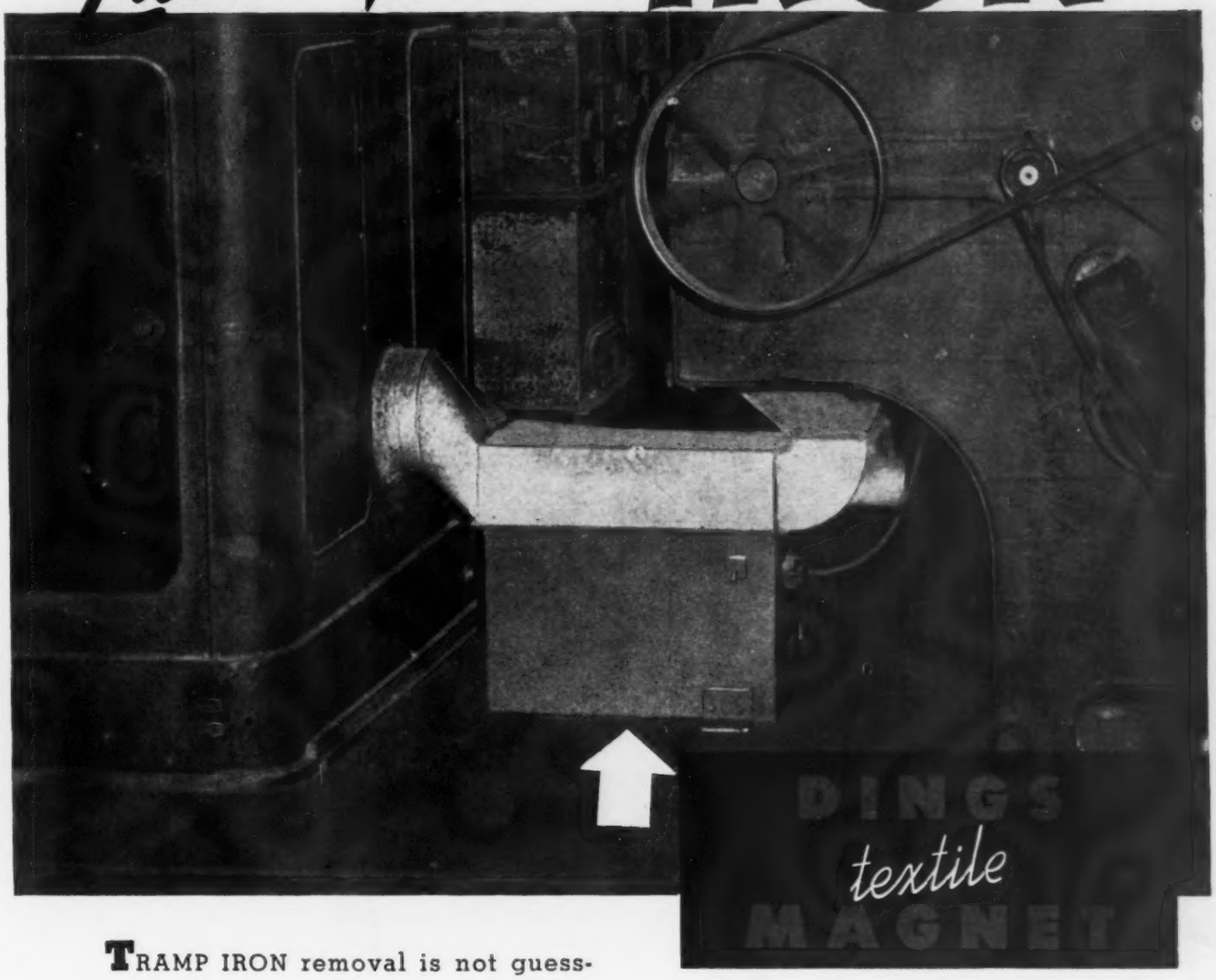
IOE ENGINEERING VERSATILITY

THE INDUSTRIAL *Oven Engineering* COMPANY

13825 TRISKETT ROAD, CLEVELAND 11, OHIO

★ ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON, W. 1, ENGLAND ★

last stop for TRAMP IRON



TRAMP IRON removal is not guesswork with Dings Textile Magnets. "High Intensity" magnetic strength—with more than 20 times the effective range of non-electric magnets—allows installation of Dings Magnets with no restricted ducts or complicated zig-zags to slow production volume and create the possibility of chokes.

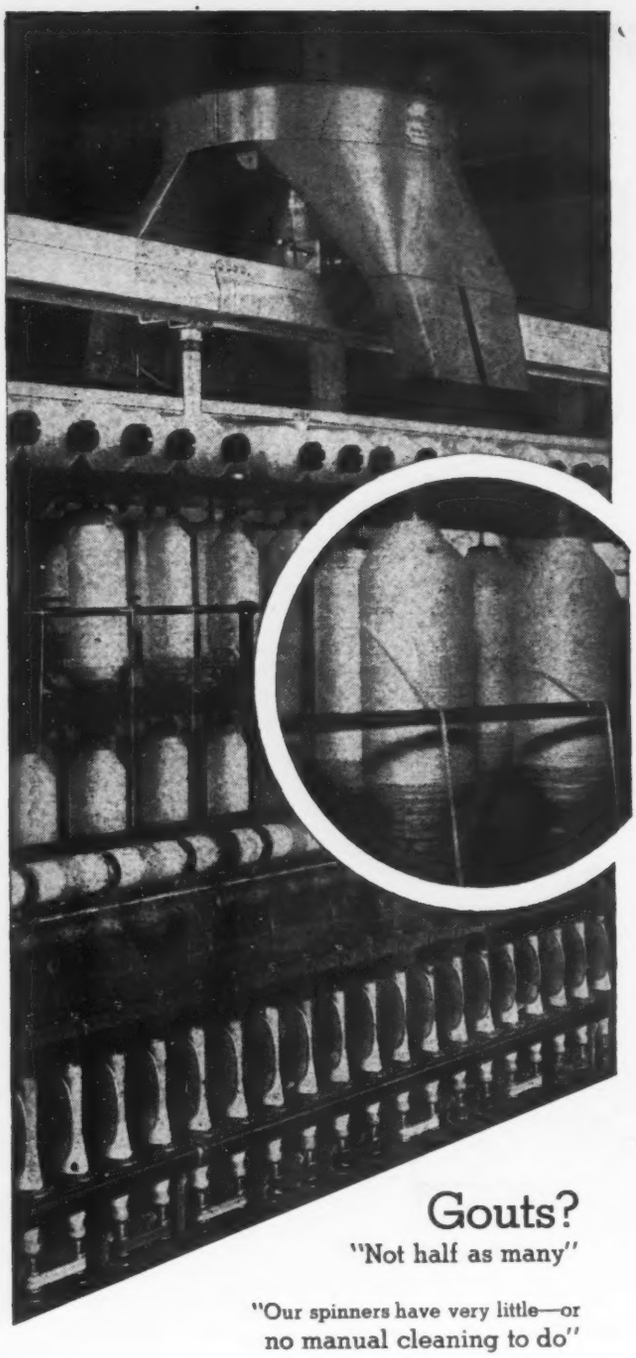
With Dings, *one* magnet does a positive iron removal job . . . Does not lose its magnetic strength after a few months use . . . Has corrugated, non-sparking bronze face plate to help trap non-magnetic as well as magnetic foreign substances.

Write Dings today for full details on positive magnetic protection for your mill.

DINGS MAGNETIC SEPARATOR CO.
540 E. Smith Street • Milwaukee 7, Wisconsin

"Separation Headquarters Since 1899"

Dings
"HIGH INTENSITY"



Gouts?

"Not half as many"

"Our spinners have very little—or no manual cleaning to do"

"Parks Traveling Cleaners helped greatly. Wouldn't want to be without them"

'After installing your Cleaners in spinning, improvement was noticeable in the weaving. Loom stoppage was reduced 32 per cent.

Outlets in Parks Traveling Cleaners may be adjusted. Air streams may be spotted directly down, or out. Each side may be adjusted independently of the other.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

NEWS ABOUT Suppliers

Scott & Williams, Inc., Laconia, N. H., has purchased Building 80, a government-owned war plant in that city, which will add 100,000 sq. ft., or 50% more space, to its knitting-machine manufacturing facilities. The plant, now to be devoted to the manufacture of knitting machines, turned out airplane parts during the war.

Saco-Lowell Shops, Boston, Mass., has transferred C. S. Smart, Jr., from Charlotte, N. C. to Greenville, S. C., where he will be in charge of that office, succeeding H. P. Worth recently resigned to enter business for himself. Mr. Smart is a graduate of N. C. State College and was recently released from the Army.

Sulzer Bros., Winterthur, Switz.—Dr. F. Oederlin, managing director of this company, is arriving in the United States the middle of this month.

C.I.T. Corp., New York, N. Y., has opened a regional office in Atlanta at 223 Peachtree Street, N. E., under the management of Edward H. Mayer, assistant vice president.

Diamond Alkali Co., Pittsburgh, Pa., has elected John A. Sargent as treasurer.

Johns-Manville, Inc., New York, has started erection of a new and extensive research laboratory on a 93-acre site near Bound Brook, N. J., which is part of the company's $50,000,000 general expansion program.

John C. Turner, Atlanta, Ga., is now representing Blackman Uhler Co., Spartanburg, S. C., manufacturers of tinting materials for all types of yarn. He is also representing J. C. Paddock Co., of Spartanburg, on trucks, doffing boxes, and quill cans.

Morris Speizman, Inc., Charlotte, N. C., has completed its rebuilding program and staged a formal reopening early in September.

E. I. du Pont de Nemours & Co., Wilmington, Del.—Dr. C. Lalor Burdick has returned from a year's duties in Mexico City and will head a special "High Polymer Committee" to study and coordinate Du Pont research and manufacturing activities concerned with such materials as nylon, plastics, and similar polymeric compounds.

JAMES BARR, long associated with David Gessner Co., Worcester, Mass., manufacturers of cloth finishing machinery, has been appointed sales manager of that organization in charge of both sales and service.

National Starch Products, Inc., New York—Al C. Fink has retired from active business after 35 years with the National Adhesives Division of National Starch Products, Inc. and its predecessor companies. He joined the old National Gum & Mica Co. in 1911.

Onyx Oil & Chemical Co., Inc., Jersey City, N. J., is expanding its production facilities through the acquisition of a plant at St. Charles, Staten Island, N. Y. Production schedules have been set up for manufacturing resin emulsions, quaternaries, and alkyl naphthas. This is to be extended to include larger volumes of other products now being made at the Jersey City plant.

Celanese Corp. of America, New York, has appointed J. D. Fennebresque as general manager of its Chemical Division and W. Ward Jackson as sales manager.

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., has re-

(Continued on page 284

TIME-TESTED TIPS FOR MILL MAINTENANCE MEN

For Streak-Free Dyeing Scour Wool The Oakite Way

Consistently uniform shades in the dyeing of raw wool depends importantly on the scouring and rinsing operations. All dirt and grease . . . all lime and similar minerals must be thoroughly removed and completely rinsed away.

You can confidently count on widely-used Oakite detergents to help give you that precise degree of cleanliness so essential for even, streak-free dyeing. Oakite detergents are scientifically designed to provide good wetting-out action for the complete removal of soil and grease. Oakite detergents also have unusual lime-solubilizing properties that assure thorough rinsability . . . even in hard water areas.

Our nearby Oakite Technical Service Representative will gladly work with you . . . develop a formula designed to meet your specific conditions. Write!

OAKITE PRODUCTS, INC., 42 Thames St., NEW YORK 6, N. Y.
Technical Service Representatives Conveniently Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* **CLEANING**
MATERIALS · METHODS · SERVICE · FOR EVERY CLEANING REQUIREMENT

VITAL INFORMATION *for* DESIGN ENGINEERS

A GUIDE TO BETTER ENGINEERING PRACTICE

THIS new 32-page Split Ballbearing Catalog, just off the press, contains up-to-date information on types of Split Ballbearings, applications, engineering and technical data, load ratings, maintenance and special engineering service. A copy will be gladly mailed. Please make your request on company stationery giving your name and title.

Ask for Catalog No. 84-D

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SPLIT BALLBEARING CORPORATION
LEBANON, NEW HAMPSHIRE, U. S. A.

More than ever, the attention of alert management is being directed toward the Southeast. Already, hundreds of industries have found advantageous locations here for expanding manufacturing and distributing facilities.

In planning your own program for utilizing the vast resources of the Southeast, you will need *facts, complete surveys, specific information,* to enable you to find the exact location best suited for your individual purposes.

Intimately familiar with this section, the Seaboard's Industrial Department is especially well equipped to supply the data you must have. A staff of trained specialists, with long and varied experience in assisting business concerns in these matters, is ready to help you gain the advantages which are to be found in our territory.

Your request for plant location information will be treated in strict confidence, promptly, and without obligation on your part. We invite your inquiry—simply address:

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General Industrial Agent
Seaboard Air Line Railroad Company,
Norfolk 10, Virginia.

SEABOARD
AIR LINE RAILROAD COMPANY

THROUGH THE HEART OF THE SOUTH

UNISTEL

STAINLESS STEEL DRY CANS

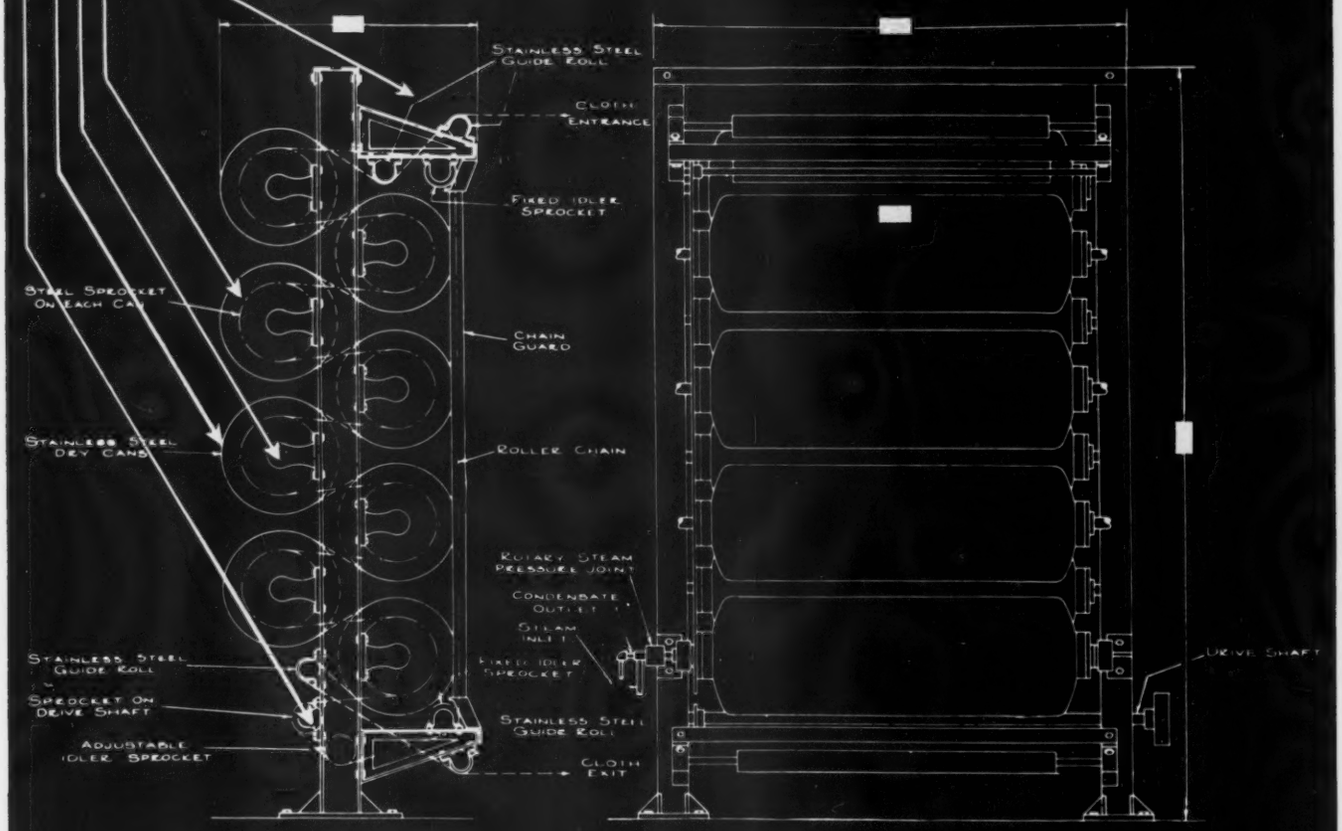
Drive shaft mounted on self-aligning ball bearings.

Cans have solid stainless steel shells.
Cans have solid stainless steel A.S.M.E. F&D heads.
Cans are constructed to Par. U-69 of the A.S.M.E.
Unfired Pressure Vessel Code for 35 W.P.
Cans are acceptable for State Codes and Insurance.

Cans mounted on ball bearing self-aligning expansion and non-expansion journals.
Cans equipped with rotary pressure joints and syphons

Sprocket and roller chain transmission

Guide rolls are stainless steel
Guide rolls mounted on self-aligning ball-bearings



Engineers—Designers—and Builders of Back Dryers, Can Dryers, Kiers, Kettles, etc.

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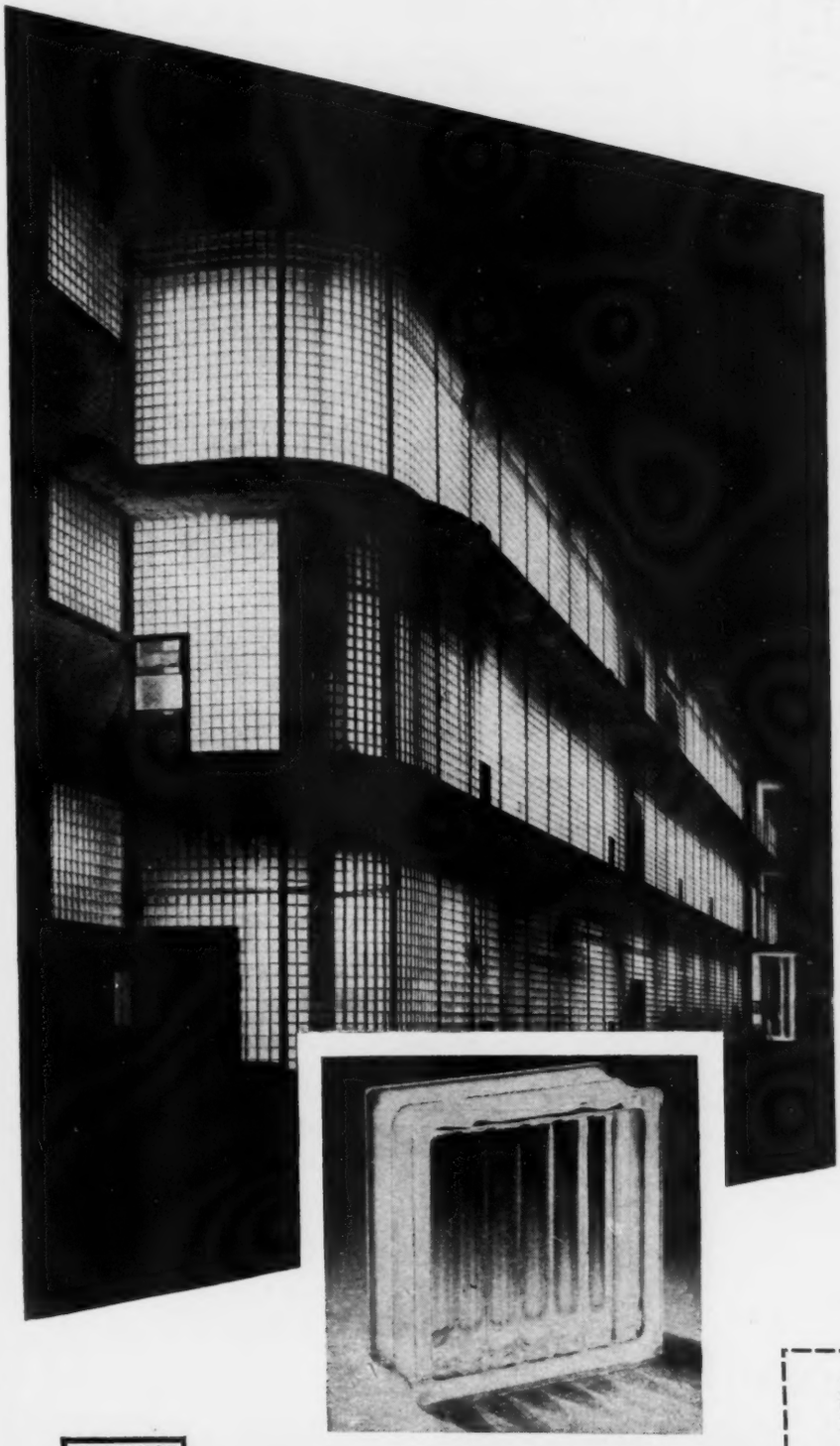
Satisfied users tell why they like

PC GLASS BLOCKS



"Our PC Glass Blocks, by improving our lighting, enable our workers to turn out more goods."

"The big panels of PC Glass Blocks are easily kept clean. There are no unsightly broken panes of glass."

"The insulating properties of PC Glass Blocks decrease heat losses through large lighting areas, even in very cold weather."

THOSE are only a few of the statements made by our satisfied customers. There are many additional reasons why it will pay you to bring more cheerful, bright light into your offices and workrooms with PC Glass Blocks.

You, too, can save money by gaining additional working space, using less artificial light, reducing repairs and maintenance costs, when you install a properly engineered PC Glass Block lighting system.

For your guidance, we have recently published a lavishly illustrated book, showing the many and varied uses of PC Glass Blocks in building construction. Engineering data, typical layouts and specifications are included, as well as the full line of patterns and sizes and a description of the functions of each type of block.

Send for your free copy of this book today. Just fill in and mail the convenient coupon and it will be forwarded promptly, without obligation.

· *Also Makers of PC Foamglas Insulation* ·

PITTSBURGH PC CORNING GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY *and by W. P. Fuller & Co. on the Pacific Coast*

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Please send along my free copy of your new book, on the use of PC Glass Blocks for Industrial Buildings. It is understood that I incur no obligation.

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Factoring is used by large as well as small firms. Let us give you further information, without obligation.

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TRUST COMPANY OF GEORGIA

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Next door to every mill in the South

NEWS ABOUT SUPPLIERS

organized its Dye Application Laboratories in three main divisions. Dr. A. L. Peiker has been appointed associate manager and administrative assistant to W. H. Watkins, manager of the Dye Application Laboratories. O. W. Clark has been appointed assistant manager in charge of the cotton, viscose rayon, and resin-bonded-pigments section of the Textile Division. H. E. Millson has been appointed assistant manager to direct the wool, nylon, acetate, and specialties section of the Textile Division. F. O. Sundstrom has been named assistant manager of the leather and paper section, and W. H. Peacock assistant manager of the plastics and specialties section of the Leather, Paper, and Plastic Division. In the Evaluating and Testing Division, R. R. Sleeper will be in charge of new product evaluation and F. C. Dexter in charge of pigment testing and identification. Calco has appointed Dr. W. A. Raimond and Dr. T. H. Thelin as chief chemists of the Vat Dyes and Intermediates Divisions, respectively. Dr. G. S. Herrick, Dr. C. E. Lewis and Dr. R. H. Ebel have been appointed assistant chief chemists of the Basic Dyes, Organic Pigments, and Rubber Chemicals Divisions, respectively.

Dexter Chemical Corp., New York, has added I. Peters to the sales force of its Textile Chemical Division and assigned him to the New York and New Jersey area, with headquarters at the company's general offices at 819 Edgewater Road, New York. Before his military service, he was textile chemist and colorist at the Pilgrim Piece Dye Works. Since his discharge from the Army, he has been sales and manufacturing consultant in the detergent field.

Nuodex Products Co., Inc., Elizabeth, N. J., has appointed George W. Gregg as sales manager of the newly formed Southern region with offices at 411 Bienville Street, New Orleans 16, La. Thompson Hayward Chemical Co. will continue as Nuodex agents in New Orleans, and Mr. Gregg will be responsible for Nuodex activities among all agents in the new territory which includes North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Texas, Oklahoma, and Tennessee.

Textile Industry Research, Inc., New York, has added to its staff William McGregor Clark, who was recently discharged as lieutenant-commander from the Navy. He was previously connected, for almost 20 years, with the American Thread Co. and was vice-president of that company and general manager of the Holyoke plant. He soon will leave for Syria to supervise the erection and starting up of textile mills which were purchased in this country in cooperation with Textile Industry Research, Inc.

Wyandotte Chemicals Corp., Detroit, Mich., will spend $25,000,000 for additions to its present plants within the next 18 months. The program of expansion and diversification makes possible an increase in the corporation's sales by more than 30% by 1948. An

(Continued on page 288)

WALTER W. RAY (right), vice president of Henry K. Barnes Co., Salem, Mass., and Mrs. Ray greet Allan Towler, leather manufacturer of Cullingworth, Yorkshire, England, as he arrives by plane for an inspection of the Barnes tannery and textile-leather manufacturing plant. Upon his departure, the Englishman reported that American production methods are superior to those in his country. Mr. Ray was the guest of Mr. Towler in England earlier this year.

Speed Production

. . . WITH AN

ANSUL *Portable* SO_2 ANTI-CHLOR SYSTEM

- EASY TO SET UP
- MORE ECONOMICAL TO USE
- NO HAZARDS—NO DANGER TO GOODS
- REQUIRES MINIMUM ATTENTION
- METERED DISCHARGE OF SO_2 PROVIDES ABSOLUTE CONTROL OF CONCENTRATION

Write the Ansul technical staff for detailed information on "How to set up an Ansul Portable SO_2 Anti-Chlor System."

*REG. U. S. PAT. OFF.

ANSUL CHEMICAL COMPANY
INDUSTRIAL CHEMICALS DIVISION, MARINETTE, WIS.
Eastern Office: 60 E. 42nd St., New York City

The **FLEX V** TRADE-MARK

Belt Fastener for A and B Belts of open end construction

Size No. A180 for A Belts
Size No. B214 for B Belts

Flex V fasteners are made in two sizes for joining A and B V-belts of special open-end cross-woven fabric construction and on drives rated as light duty with a belt speed of not over 3000 feet per minute. The fasteners must not be used on heavy duty or high speed drives or for joining or repairing V-belts that were originally endless.

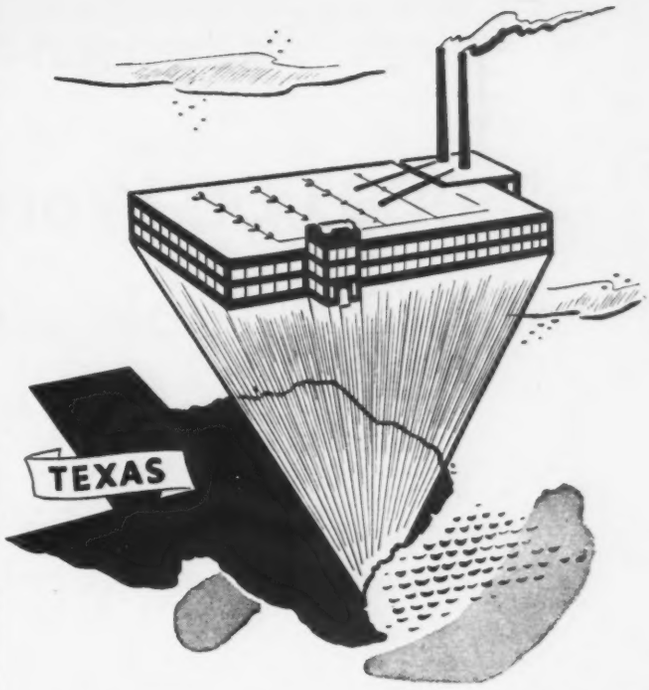
Flex V fasteners are easy to apply with the special applicator tool. The separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. Flex V fastened V-belts can also be run on V Flat Drives for there is no metal on the under side of the belt to contact the flat faced pulley.

Folder No. V-12 gives complete details on this Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

Order from your supply house

FLEXIBLE STEEL LACING CO.
4630 LEXINGTON ST., CHICAGO 44, ILLINOIS

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.



Locate your New Plant to Take Advantage of

The largest COTTON PRODUCTION in the U. S.: Texas produces 20% of U. S. cotton.

The largest WOOL PRODUCTION in the U. S.: Texas produces 24% of U. S. wool.

The largest MOHAIR PRODUCTION in the U. S.: Texas produces 91% of U. S. mohair.

A growing production of SYNTHETICS: made from Texas' superabundant Natural Gas.

PLUS

A mild climate, native American working men and women, rail and water transportation to all domestic and foreign markets, pure water, and efficient, economical, *clean* natural gas for fuel.

Send for a carefully ENGINEERED, INDIVIDUAL SURVEY of the Texas Coast Country for your company. Your request will be kept in strict confidence, and there is, of course, neither cost nor obligation. Address Research Department, Houston Pipe Line Company, Houston, Texas.

HOUSTON PIPE LINE CO.
Subsidiary of Houston Oil Company of Texas
GEO. A. HILL, JR., President
Wholesalers of Natural GAS

RUST PREVENTION

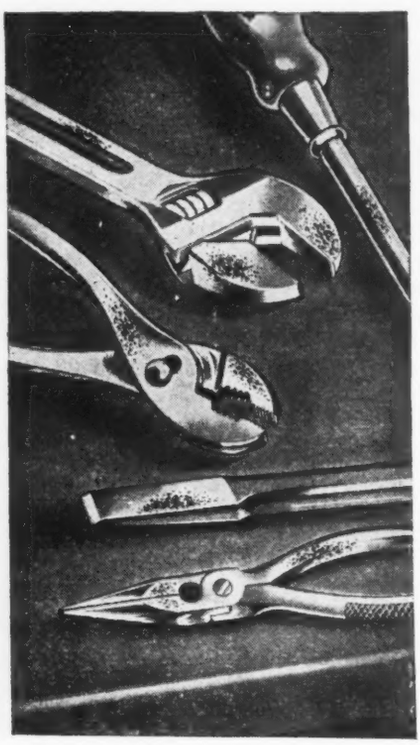
$100,000 Worth of Hand Tools saved from "RUST"

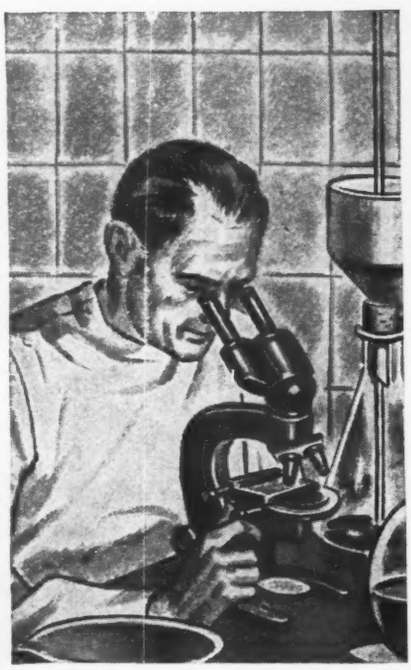
NEW PRODUCT DOES THE JOB AFTER PLANT CONDUCTS EXHAUSTIVE TESTS

Lubrication Engineer's Report

"Some time ago, we were called in by a prominent manufacturer.* Corrosion of all metal parts in his entire plant had gone out of control. The machine shop and hand tools, valued in excess of $100,000, were a sorry looking "dusty-brown." Everything they had used in the way of rust preventives heretofore failed to solve their difficulty.

After studying their problem we recommended our General Purpose Anti-Corrode No. 100 and suggested that they give it exhaustive tests. Their chemist did so and we are happy to report that it solved their problem.





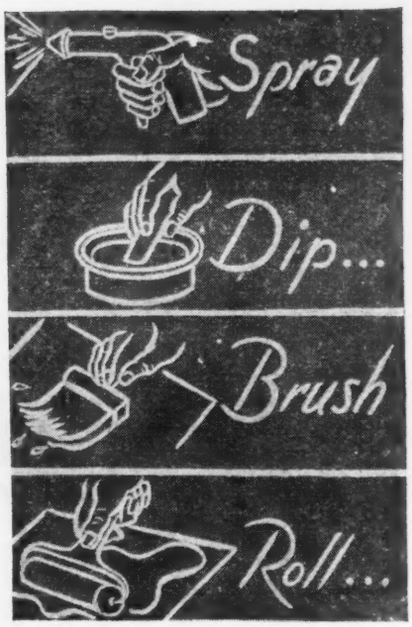
Used On Hand Tools As Well

They have since used over 150 gallons of this Anti-Corrode on everything metal in their plant, including small hand tools such as pliers and screw drivers."

Anti-Corrode No. 100 is one of several new types of Cities Service protective coatings for metals. Designed to prevent corrosion of raw stocks, finished parts and completed machines, it adheres firmly, displaces moisture and protects longer than similar materials now on the market.

Easy To Apply

Apply Anti-Corrode by ordinary work-shop methods. Spray, dip, brush or roll it on. The protective film is continuous and non-porous —does not break at sharp edges nor rupture on flat surfaces. It need not be removed from metal to be stamped, drawn or otherwise formed.



Write For Demonstration

Cities Service will demonstrate the many advantages of Anti-Corrode to you in your own plant. Contact the branch office nearest you or write Cities Service Oil Co., 60 Wall Tower, New York 5, N. Y.

* Name on Request

CITIES SERVICE OILS
ONCE-ALWAYS

FOR EVERY RUST PROBLEM

CALL Cities Service FIRST!

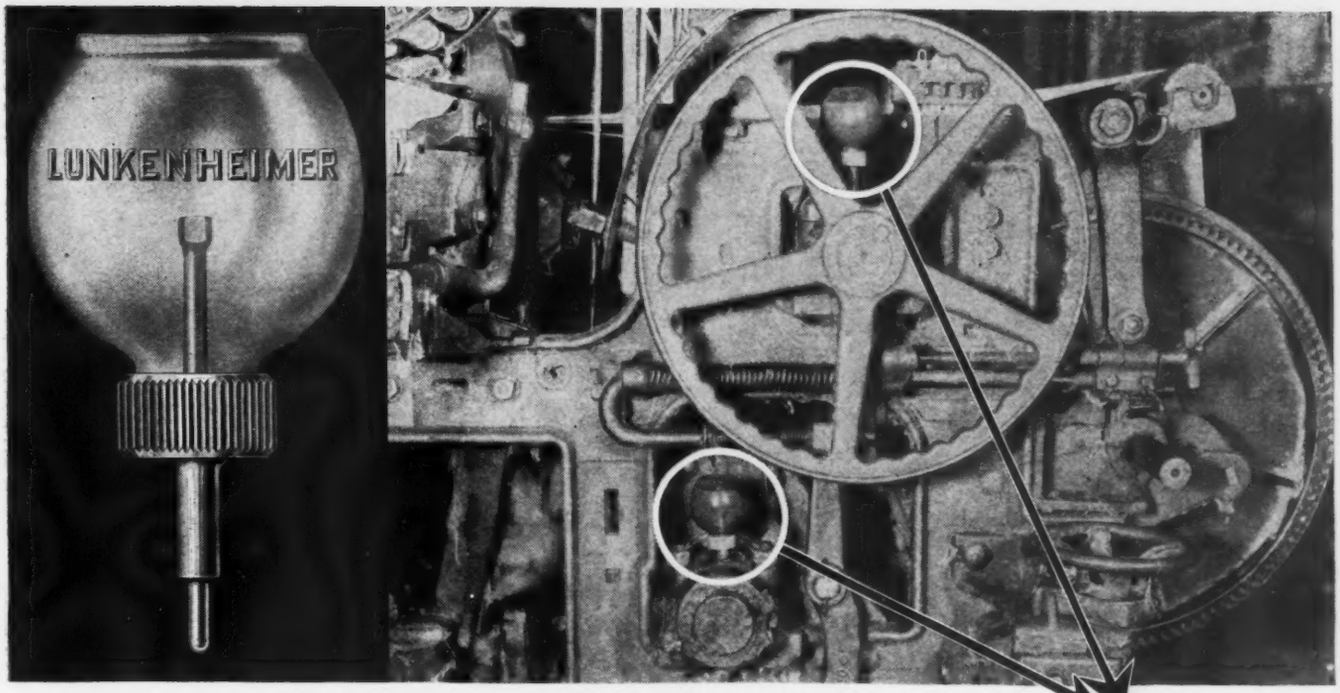


Fig. 1815
BOTTLE OILER
Globe Body
Fully automatic. Insures efficient, uniform, economical lubrication of bearing. Feeds oil only when shaft is in motion.

Typical use of Lunkenheimer Bottle Oilers in large textile mill.

LUNKENHEIMER *Visible* BOTTLE OILERS

Save Time, Labor and Oil... Lubricate ALL Bearings Dependably

Leading textile mills everywhere are turning to Lunkenheimer Visible Bottle Oilers for better, more dependable, more economical and trouble-free lubrication of looms and card machines.

Lunkenheimer Oilers are fully automatic in operation. They feed the right amount of oil, in the right way, at the right time, to the right place. Oil wastage, hazards created by oil spilled on floors, and loss of time incident to frequent hand oiling are eliminated.

With Lunkenheimer Bottle Oilers, the overseer can know immediately if the loom or card machine is being lubricated, which is impossible where the oiling device is hidden from view.

Lunkenheimer Bottle Oilers improve plant production, lower machinery and repair costs, reduce power consumption, eliminate waste of lubricant, lessen fire and accident hazards, and require but a minimum of inspection and supervision.

See your nearest Lunkenheimer Distributor, or write

THE LUNKENHEIMER CO., Cincinnati 14, Ohio, U. S. A.

New York 13, Chicago 6, Boston 10, Philadelphia 7.
Export Department: 319-322 Hudson St., NewYork 13, N. Y.

Fig. 1816
BOTTLE OILER
Flat Side Body
For use where space does not permit installation of Globe Body Oiler. All operating features same as in Fig. 1815.

YOUR LUNKENHEIMER DISTRIBUTOR

Lunkenheimer Distributors are located in the principal industrial centers. There is one near you fully equipped to assist with your maintenance and operation problems. Call on him.

LUNKENHEIMER VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT ALLOY VALVES, 125 TO 2500 LB. S. P.;
BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

COMMONWEALTH
COLOR & CHEMICAL CO.

More than thirty years' experience in the manufacture of Chemical Specialties, Dyestuffs and Dyewoods for the Textile and Allied Trades

MAIN OFFICE AND WORKS:
NEVINS, BUTLER and BALTIC STS., BROOKLYN 17, N.Y.
PHILADELPHIA - CHICAGO
GLOVERSVILLE - MONTREAL

important innovation is the fact that Wyandotte will enter the organic chemicals field on a large commercial scale after producing inorganic chemicals and cleaning materials for over 50 years. A large plant for glycol manufacture and one for an alkyl aryl sulphonate type of synthetic detergent will be built. In addition, soda ash capacity will be increased 15%.

Mathieson Alkali Works, New York, has entered the fire-protection field with both high and low pressure carbon-dioxide equipment. Harry Ensminger will head the fire protection department, with headquarters at the company's New York offices. Engineering services include surveys of occupancies to determine fire protection requirements, plans for systems, and supervision of installation.

National Plastics, Inc., Knoxville, Tenn., has appointed Ira Valentine, formerly with Johnson Bronze Co., as its sales manager. He will divide his time between Atlanta and Knoxville. Mr. Valentine has appointed the following representatives to handle the territories designated: Arthur Harris, of Atlanta, for Georgia, Alabama, Mississippi, Louisiana, Arkansas, and West Tennessee; Henry Hersey, of Greenville, for South Carolina and East Tennessee; Watson & Desmond, of Charlotte, for North Carolina, Virginia, West Virginia, Maryland, Delaware, and Pennsylvania; Tom Emmons and Clarence Morrison, of Emmons Loom Harness Works, for New England and Canada.

Louden Machinery Co., Fairfield, Iowa, has appointed a number of additional representatives in the South to handle distribution, including the following: Eastern Virginia, R. T. Overstreet, Wainwright Building, Norfolk 10; Western Virginia, Reliance Equipment & Supply Co., 11 Franklin Road, Roanoke; North Carolina, except extreme western portion, E. F. Culbreath Co., Johnston Building, Charlotte; South Carolina, Hugh Black, Woodside Bldg., Greenville; Central Georgia, T. D. Thompson, Decatur; Central Alabama, Ebbert & Kirman, Brown-Marx Bldg., Birmingham; Eastern Tennessee and Western North Carolina, Eustis Lancaster Associates, Johnson City, Tenn.; Northwest Georgia, Northeast Alabama, and South Central Tennessee, H. M. Sawrie, 921 Carter St., Chattanooga; Southern Alabama, N. Y. Nutting, Mobile, Ala.; Southeastern Georgia and Northeast Florida, Brown Supply Co., Florida Theater Bldg., Jacksonville; Southern Florida, Ross S. Fleming, Long Beach, Fla.; C. S. Easley, LaGrange, Ga., is Southeastern area supervisor.

CHARLES O. CHESTNUT, who has been named general manager of the newly organized Pacific Division of Wyandotte Chemicals Corp., Wyandotte, Mich. Manufacturing and distributing activities in the Pacific States of the J. B. Ford and the Michigan Alkali Divisions of Wyandotte, and of Natural Soda Products Co., will be directed from the Pacific Division office at 502-14 Central Tower Bldg., San Francisco 3. Mr. Chestnut has become president of Natural Soda Products Co., Owens Lake, Calif., on the retirement of Stanley Pedder. Field sales activities of the former J. B. Ford Division will continue to be supervised by P. S. Spencer. He will be sales manager of the Pacific Division.

Raytheon Mfg. Co, Waltham, Mass., has recently opened a sales and service office at 306 Candler Bldg., Atlanta, Ga. Roy E. Cawhern, who was formerly with Westinghouse Electric Corp., will be in charge of this office as Southeastern district manager. Raytheon is offering electrostatic precipitators and dielectric heating equipment to the textile trade.

Pennsylvania Salt Mfg. Co., Philadelphia, has appointed Frederick C. Abbott, formerly manager of the New Products Division, as assistant production manager in its manufacturing department, reporting to C. S. Beldin, production manager. Hugh Richard Bishop has been named manager of the New Products Division re-

(Continued on page 292)

SMOKE WILL RISE FROM A THOUSAND CHIMNEYS

The industrial South is just beginning to come into its own. Actually, the surface has hardly been scratched in the realm of industrial possibilities in many localities.

As the South marches forward in the parade of events to become a far-flung industrial empire, its manufacturing leaders must see that its expansion is soundly based and expertly engineered to avoid those pitfalls which haphazardly-planned, unengineered expansion might bring.

We offer complete engineering, designing, production cost analysis and other services which enable you to appraise your future operations on a planned and intelligent basis.

THE McPHERSON COMPANY
Greenville South Carolina

Industrial Engineers

INDUSTRIAL SURVEYS • PLANT SITE INVESTIGATIONS • COMPLETE PLANT DESIGNS • APPRAISALS • VALUATIONS • LABOR SAVING STUDIES • RESEARCH & REPORTS • PROCESS ANALYSIS • PLANS

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WATER TREATMENT – INDUSTRIAL WIRING – STEAM UTILIZATION – WASTE DISPOSAL – ELECTRIFICATION

for Better Belt Joints

To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.

use Clipper Belt Hooks

Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.

and Clipper Belt Lacers!

The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.

Clipper BELT LACING EQUIPMENT

MORFLEX COUPLINGS
need no lubrication

Morflex couplings operate entirely without lubrication. No oil or grease to throw off and soil or contaminate. Special rubber trunnion biscuits permit some misalignment, cushion shock, isolate vibration, smooth operation. No metal-to-metal contact. Sizes from 2" to 12" diameter for various capacities.

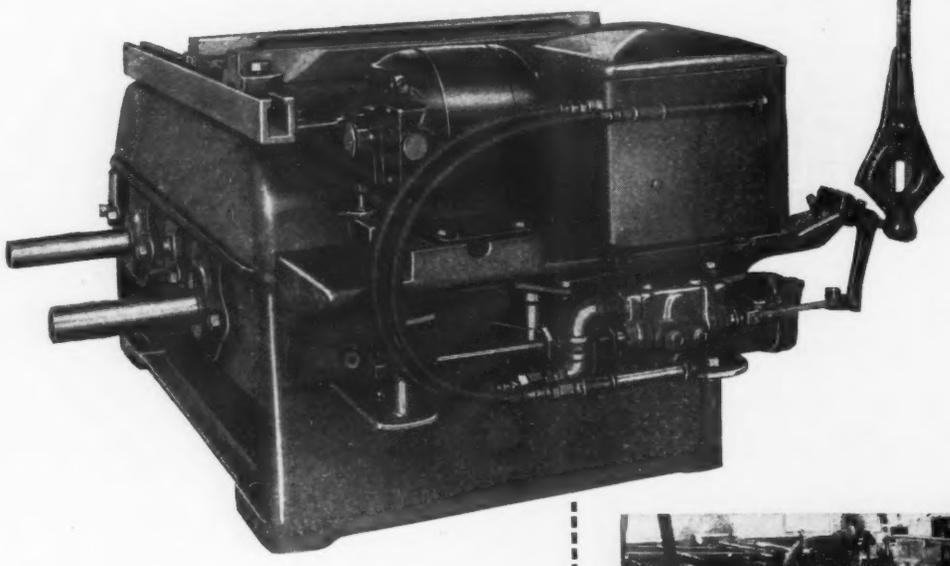
MORSE CHAIN CO. • Detroit 8, Mich. • Ithaca, N.Y.
A Borg-Warner Industry

MORSE COUPLINGS and DRIVE SHAFTS

Automatic Tension Control

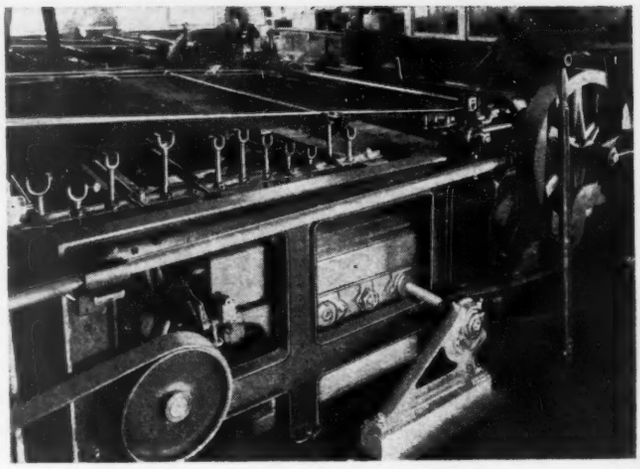
WITH REEVES SENSITIVE PISTON-TYPE HYDRAULIC REGULATION

pressure of only 1 to 2 ounces activates this indicator lever to effect speed changes



To run cotton, wool or any synthetic material in a continuous process, *without stretch* on cloth, install REEVES Hydraulic Automatic Speed Control. Consisting of the time-tested REEVES Variable Speed Transmission with piston-type, hydraulic regulation, this is the simplest, most dependable drive and control available. It can be serviced and maintained by any mechanic. No special tools nor training are necessary.

So sensitive is REEVES Hydraulic Automatic Control that pressure of only 1 to 2 ounces through follower roll, dancer roll or other activating force will produce changes in speed to regulate tension automatically and precisely to the degree desired. Already being widely used in range finishing—on beaming warpers, slashers and other winding processes. Our "field" engineers are thoroughly experienced in textile processes. Write us for special bulletin on REEVES Hydraulic Automatic Speed Control and ask for copy of complete catalog W-450.



Illustrated above is a REEVES Transmission with hydraulic automatic control driving loom beam of slasher. The sensitive hydraulic control lever is connected to a very simple follower roll which bears lightly against the yarn on the loom beam. Through its hydraulic control, the REEVES unit automatically reduces the r.p.m. of the loom beam and maintains constant y.p.m. surface speed as the beam increases in diameter. Reduces yarn stretch in slasher to less than 1%.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

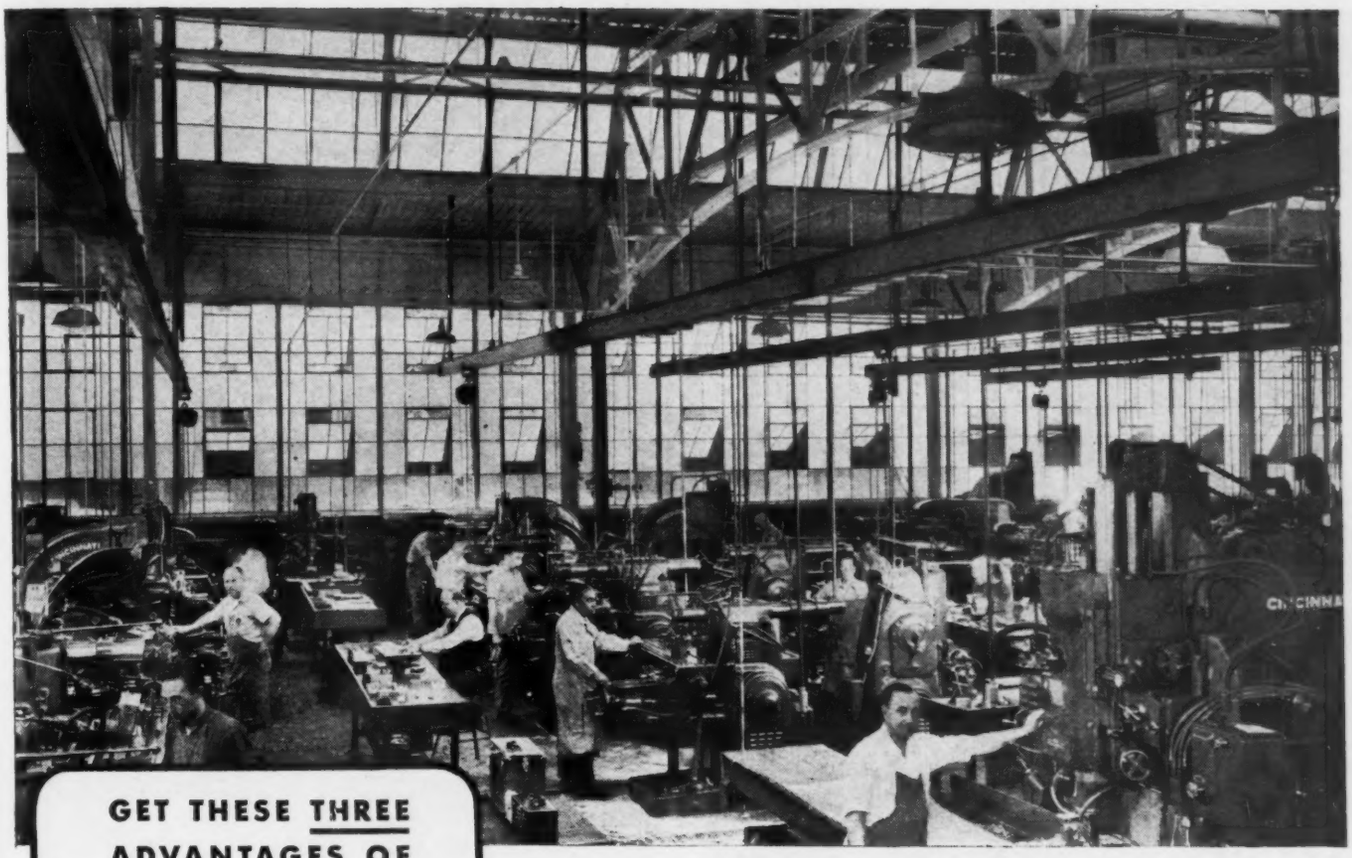
Recognized leader in the specialized field of Speed Control Engineering.

Accurate Variable

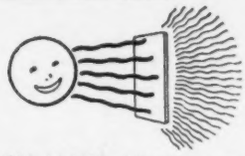
REEVES Speed Control

Gives the Right Speed for Every Job!

PRATT & WHITNEY AIRCRAFT REDUCES GLARE WITH BLUE RIDGE *Frosted* AKLO GLASS



GET THESE THREE ADVANTAGES OF *Frosted* AKLO



REDUCES GLARE—Eliminates eyestrain and employe fatigue.

RETARDS SUN HEAT—Keeps workers comfortable on their jobs.

RENDERS SAVINGS—Eliminates shades or painting of glass.

How to provide abundant *natural daylight without glare* for its machine-shop workers was the problem confronting Pratt & Whitney Aircraft in its East Hartford plant.

So the shop was glazed throughout with Blue Ridge *Frosted* AKLO Glass. The results are indicated in the above photograph, which was taken with the camera pointed directly toward the windows. Note the even spread of natural daylight over the work surfaces.

Thousands of plants in the United States and Canada, ranging from textile mills to high-precision machine shops like the one illustrated, utilize *Frosted* AKLO to reduce sun glare and heat. Its soothing, blue-green color transmits soft, restful illumination and the *frosting* eliminates eye-fatiguing light-and-dark contrast areas. It not only screens out glare, but also effectively bars entrance of radiant sun heat. Workers are more comfortable on their jobs...spoilage is reduced...and the load on air-conditioning equipment is materially lightened.

Frosted AKLO Glass is manufactured by the Blue Ridge Glass Corporation, Kingsport, Tenn., and sold by Libbey·Owens·Ford's glass distributors. If you have a sun glare-and-heat problem, ask your nearest L·O·F District Office for a Radiometer Demonstration of AKLO'S effectiveness. Blue Ridge Sales Division, Libbey·Owens·Ford Glass Company, 9996 Nicholas Bldg., Toledo 3, Ohio.

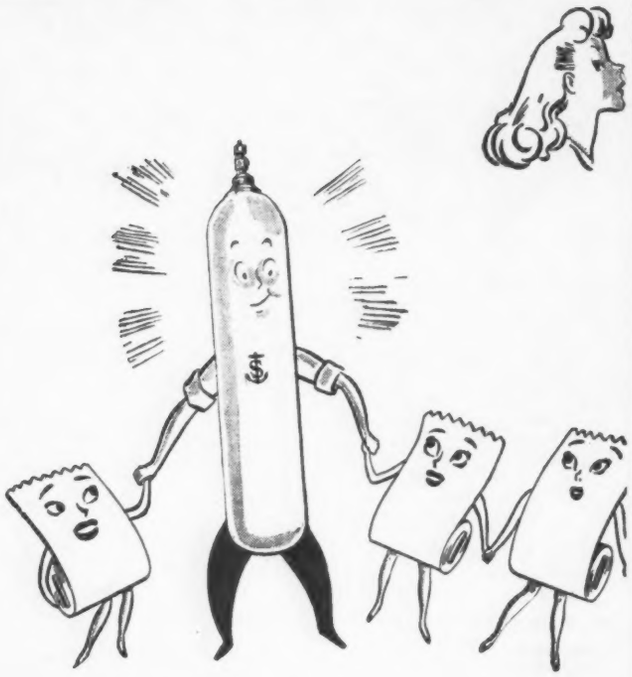
L O F

BLUE RIDGE AKLO GLASS

Heat-Absorbing · Glare-Reducing · Figured and Wire Glass

BLUE RIDGE GLASS CORP. MANUFACTURERS OF QUALITY GLASS KINGSPORT TENN.

NOT recommended for blondes . . .



but perfect for bleaching textiles

SOLVAY LIQUID CHLORINE

OF COURSE THE BUYING public doesn't know. For instance, they think cotton fields look white as the driven snow. Shows what you can do when you use SOLVAY Liquid Chlorine as your perfect bleaching agent!

SOLVAY LIQUID CHLORINE PERFECTLY performs all bleaching operations. In the first place it safeguards against spotty bleaching and uneven colors. As a water conditioner, it controls the quality of the water. Add this to its versatility, its low cost, its controlled quality, its highest standards of purity and its dependable performance and you will see why leading textile houses depend on SOLVAY Liquid Chlorine to solve all bleaching problems perfectly.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street **New York 6, N. Y.**

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
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placing Mr. Abbott. Martin E. Johnson has been transferred from the Market Research Department to the New Products Division. John M. Davidson, recently released from the United States Naval Air Force, has joined the sales staff of the Special Chemicals Division.

B. F. Goodrich Chemical Co. has acquired a war emergency synthetic rubber plant in Louisville, Ky., from the government. A portion of the facilities will be reconverted for the manufacture of Geon.

Westinghouse Electric Corp., East Pittsburgh, Pa., has appointed R. F. Wright as Chattanooga manager to succeed J. G. Simpson who retires after 40 years with the company.

Penick & Ford, Cedar Rapids, Iowa, have transferred William A. Hewitt, Jr., who for the last 4½ years has been in charge of sales of bulk corn products, starch, dextrine, etc. to cotton and paper mills of the Southwest with headquarters in Dallas, Texas, to the firm's office in Memphis, Tenn., where he will handle sales and service of a similar nature to mills in Tennessee, Arkansas, Northern Louisiana, and Northern Mississippi. Prior to becoming associated with Penick & Ford, Mr. Hewitt operated the Greensboro Supply Co., Greensboro, N. C.

Plexon, Inc., New York, has organized Plexon International Corp. to handle the international aspects of its business.

Sylvania Industrial Corp., New York, has announced the resignation of C. Chester Bassett, Jr. as manager of its Textile Finishes Division. James J. Casserly and J. Andrew Clark will continue their activities in sales and service on Ceglin, under the direction of Edwin F. James, division manager.

Westvaco Chlorine Products Corp., New York, has appointed Donald C. Oskin as resident manager of the recently opened Westvaco office at 1900 East Jefferson St., Detroit 7, Mich.

The Dayton Rubber Mfg. Co., Dayton, Ohio, has appointed Joseph L. Davis as New England manager of its Textile Products Division with headquarters in the company's Boston office.

A. J. "AL" BAKER, who has been appointed manager of rubber-thread sales of The B. F. Goodrich Co., Akron, Ohio, succeeding Karl Ryan, resigned.

Railway Supply & Mfg. Co., Cincinnati, Ohio, has appointed Gordon Sheffield, of Memphis, Tenn., as Mississippi valley representative for its Linter Cotton Division.

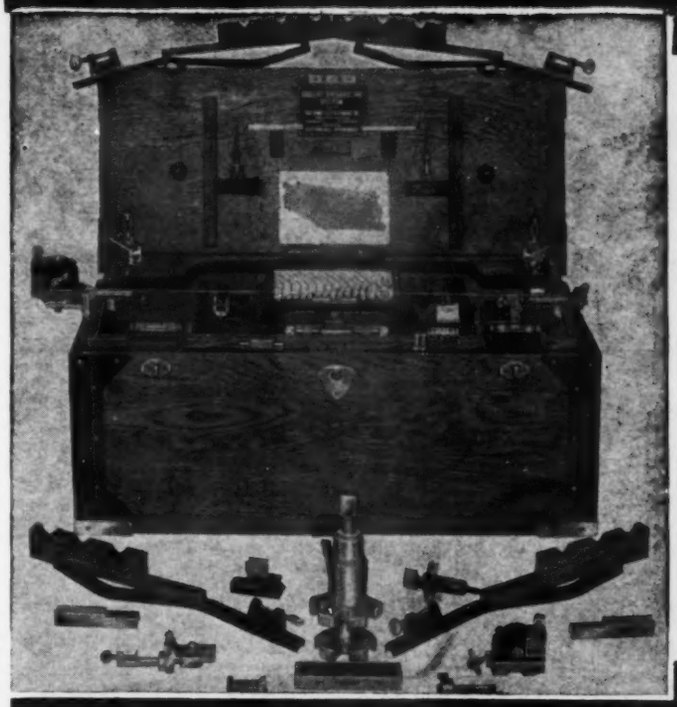
The Reliance Electric & Engineering Co., Cleveland, is establishing additional sales offices and expanding its present field sales force. William K. Schlotterbeck, recently discharged from the armed services, rejoins the Philadelphia office as sales engineer. E. H. Koontz, sales engineer, who during the war handled subcontracts in a naval ordnance program for Reliance in Minneapolis, is now with the company's New York office. Other sales engineers recently assigned to field sales offices are: R. L. Custis to New York; D. M. Larson to Minneapolis; A. C. Perrin to Chicago; and Albert Mann to Detroit.

Sylvania Electric Products, Inc., New York, has named Warren R. Purcell as manager of quality control for its Lamp Division.

Automatic Transportation Co., Chicago, has appointed Jack A. McConnell, former employment and personnel manager for the Delco Products Division of General Motors, to be its sales representative in the Columbus, Ohio, territory.

GE Lamp Department, Nela Park, Cleveland, Ohio—Formal re-opening of the General Electric Lighting Institute at Nela Park, closed during the war, was celebrated the week of Sept. 9. Elaborate rededication ceremonies were held.

"THE MODERN TREASURE CHEST"



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Guillet's system pays for itself in FOUR DIRECT SAVINGS

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The system is flexible and is designed to meet the several different requirements of any Cotton, Silk or Worsted Mill

Weekly rental or outright sale. Free demonstration on request.

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The IDEAL BASKET for

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Manufacturers : **POUGHKEEPSIE, N. Y.**

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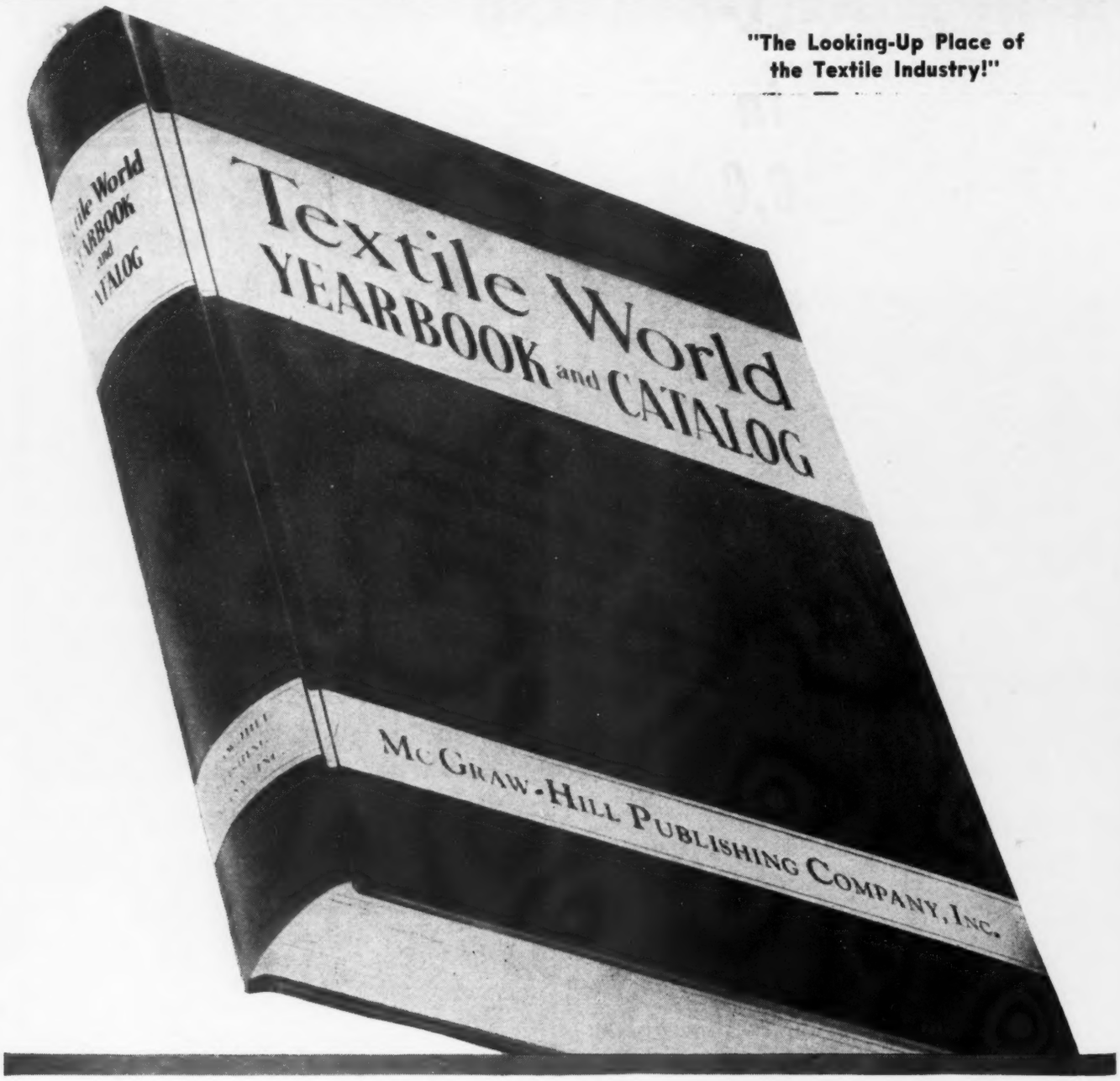

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75 pages of Mill Reference Data —representing the textile industry's only "yearbook"—with answers to hundreds of mill operation questions.

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299 pages of essential catalog data for textile machinery equipment supplies & services presented in easy to find and easy to use form.

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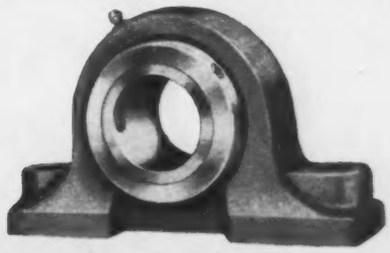
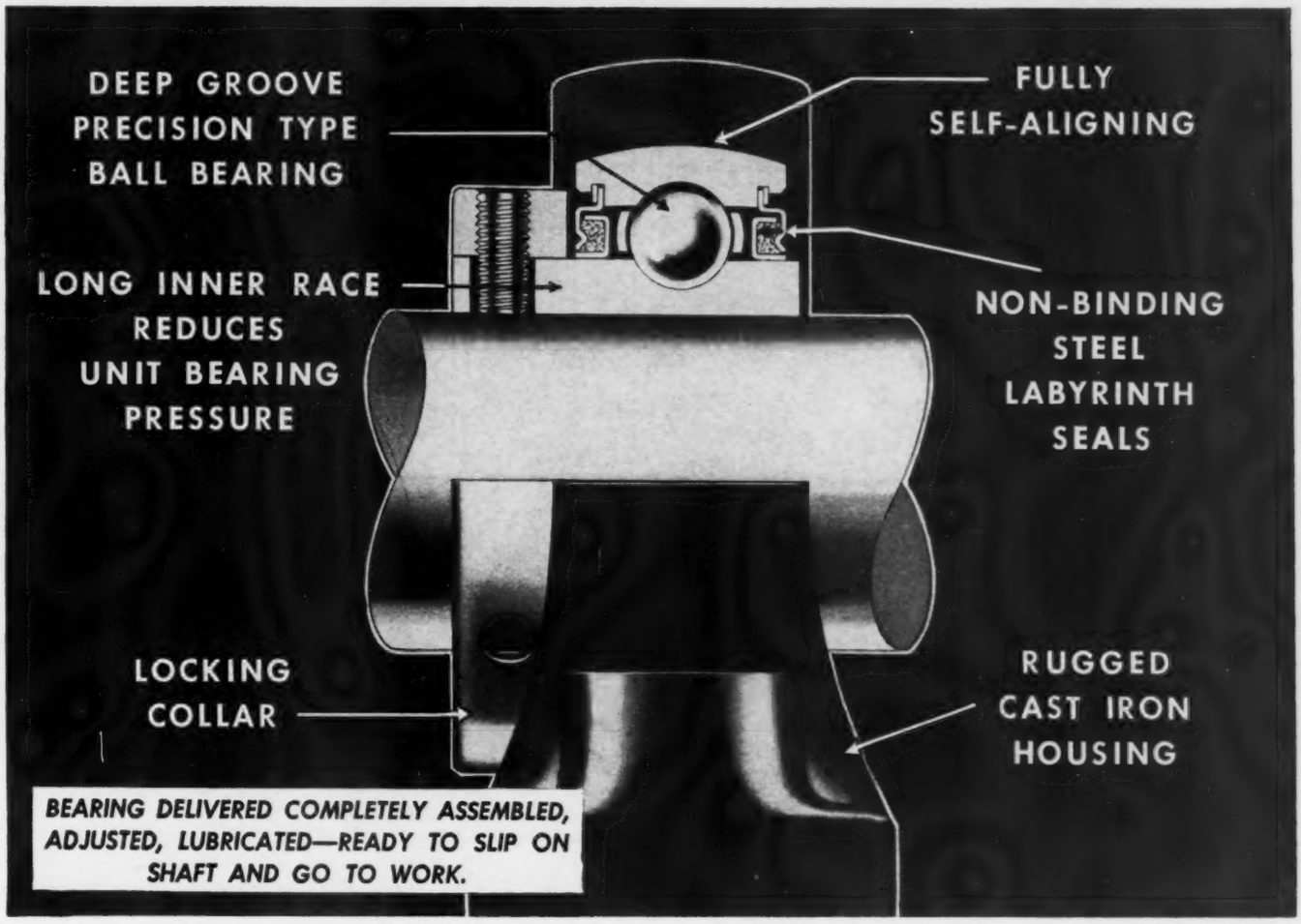
Complete directories of manufacturers of textile machinery, equipment & supplies and manufacturers of dyestuffs and chemicals.

A NEW BALL-BEARING PILLOW BLOCK

in the Famous 30,000 Hour Line

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FULLY SELF-ALIGNING
LONG INNER RACE REDUCES UNIT BEARING PRESSURE
NON-BINDING STEEL LABYRINTH SEALS
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BEARING DELIVERED COMPLETELY ASSEMBLED, ADJUSTED, LUBRICATED—READY TO SLIP ON SHAFT AND GO TO WORK.

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MISHAWAKA

If you are looking for a practical anti-friction bearing for small shafts, operating under moderate load conditions, be SURE to investigate the new Dodge SC. It has *every*-thing—high precision, modern styling, rugged cast iron housing, locking collar, radial and thrust load capacity. Self-aligning and sealed against loss of lubricant or admission of dirt. It is a completely assembled, pre-lubricated, factory-adjusted unit which comes to you ready for installation and years of smooth, uninterrupted service.

This bearing is available from stock in shaft sizes ranging from 11/16" to 2-1/4". For prices and delivery call the Dodge Transmissioneer, your local Dodge distributor. Look for his name under "Power Transmission Equipment" in your classified phone book. Or write

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THE SYMBOL THAT CAME TO LIFE

The man who walks into your factory wearing this symbol is the living embodiment of a service which gives you the correct answer to your problems in efficient mechanical transmission of power. He is the Dodge Transmissioneer.

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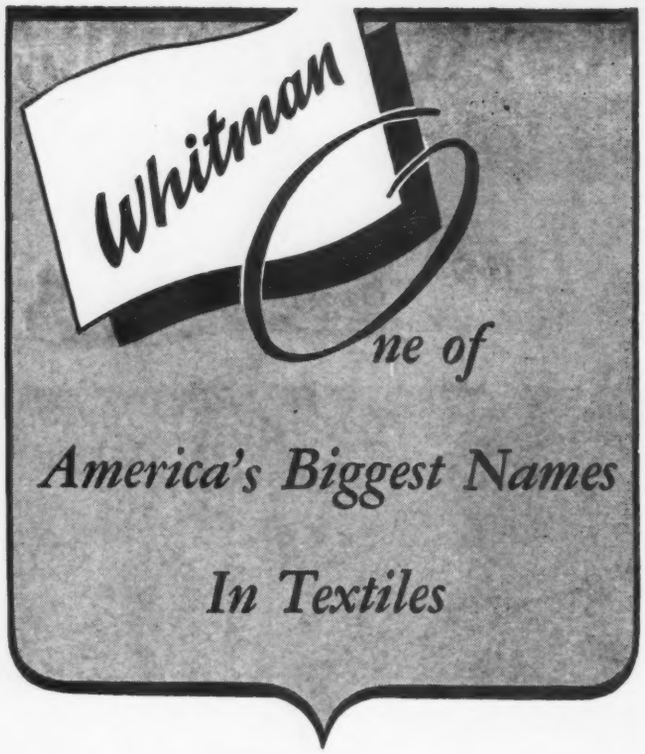
NAME PLATES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS



Wherever textiles are bought in volume, the name WHITMAN is well known. Known for long experience . . . for modern ideas . . . for keen styling . . . for sound merchandising methods.

Mills represented by the WHITMAN Company enjoy:

- Association with some of the best mill names in the industry.
- The services of a young, yet experienced sales force well established in the most desirable markets.
- Cooperation on merchandise planning, styling, distribution and, when desired, on problems of taxation and general management.

Inquiries are invited from non-conflicting accounts.

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Cotton and Rayon Fabrics Division: 40 Worth Street, New York 13, N. Y.

BOSTON 78 Chauncy Street · CHARLOTTE Commercial Bank Building · PHILADELPHIA 1600 Arch Street · LOS ANGELES 810 South Spring Street

NEWS ABOUT Mills

Cotton Mill News

China Grove Cotton Mills Co., China Grove, N. C., has begun construction of unit No. 3, which will add 15,000 spindles to the mill and employ 250 additional workers.

Colonial Mills, Inc., is spending more than $2,600,000 in an expansion program consisting of construction of a new finishing plant in Virginia and improvements to its operating subsidiary units at Robbins, N. C., Red Springs, N. C., and Rockingham, N. C. The finishing plant, under construction at Clarksville, Va., will involve expenditure of over $1,500,000 and will be completed about Jan. 1. Improvements to the Mid-State Cloth Mills at Red Springs, are expected to be completed by early 1947. At Rockingham, where the Colonial Mills operate the Hannah-Pickett Mills, improvements to the mill village and other facilities have been made at a cost of more than $100,000. A new dry-room has been added to the Robbins Cloth Mill, Inc., at Robbins.

Coventry Spinning Mill was recently formed at West Warwick, R. I., to manufacture carded cotton yarns. J. M. Brogdan is president and treasurer and William Mills, formerly with Premier Thread Co., of Central Falls, R. I., and Pequot Mills at Salem, Mass., is plant manager.

Dan River Mills is officially the new name of the Riverside & Dan River Cotton Mills, Danville, Va., as result of the vote by stockholders at a meeting on Aug. 16.

Davidson Cotton Mill, Davidson, N. C., has been offered $925,000 for its plant. Stockholders have been notified of the offer, and the expectation is that it will be accepted. The identity of the prospective purchaser has not been revealed at this writing.

Drayton Mills, Inc., Spartanburg, S. C., are completing an $80,000 housing project of five- and six-room houses for employes. The plant has installed 50 dot-filling retainers for looms, a device recently patented by Ralph M. Putnam.

Edna Mills Co., Reidsville, N. C., has sold all its physical assets to Proximity Mfg. Co., Greensboro, N. C., which has already taken over operation.

Fulton Bag & Cotton Mills Co. has purchased a site in Dallas, Texas, on which it will erect a mill having 100,000 sq. ft. of floor space.

Globe Mill Co., Mount Holly, N. C., expects its new $250,000 addition, now under construction, to be completed and in operation by the end of November, with 2,500 spinning spindles and complementary equipment.

Granite Cordage Co., Granite Falls, N. C., will construct an addition to its present warehouse which will include a cotton opening room for its textile plant; cost $45,000.

Leading Embroidery Co. will start operations about Aug. 1 in the former Cowpens Mfg. Co. plant in Cowpens, N. C. Approximately $500,000 is being invested in machinery for the plant, which was purchased for $120,000. Equipment will include 22,000 spindles and 502 looms on print cloth and sheetings.

Monticello Cotton Mills, Inc., Monticello, Ark., has awarded contract for a humidification system to be installed throughout the mill. New officers of the company are Ben Greenberg, president; Irving Greenberg, treasurer; and Terrell Spencer, general manager.

National Automotive Fibres, Inc., Detroit, Mich., has started grading on the site of a $150,000 upholstery plant which will be built in Louisville, Miss.

Nashua Mfg. Co. stockholders at a recent meeting voted favorably on the proposal to

BARBER-COLMAN AUTOMATIC SPOOLER

THIS MACHINE IMPROVES THE QUALITY OF EVERY FOLLOWING STEP IN CLOTH PRODUCTION

The installation of Barber-Colman Automatic Spoolers will improve your mill operations in many ways. This machine produces a better cheese for the warper, resulting in fewer warper stops. The beam that goes to the slashers is more uniform throughout and will help to improve efficiency of operation in the slasher room. The loom beams are better, too, so there are fewer loom stops in the weave room, producing better cloth for the finishers. Thus Barber-Colman equipment can give you, not only better winding, but increased production and lower costs all down the line. Barber-Colman Automatic Spoolers have demonstrated, through years of steady service, that they give very little trouble, require few repairs and very few service calls, and deliver uniform packages day after day with a minimum of down time. *For details on how you can profit from use of this equipment, see your Barber-Colman representative.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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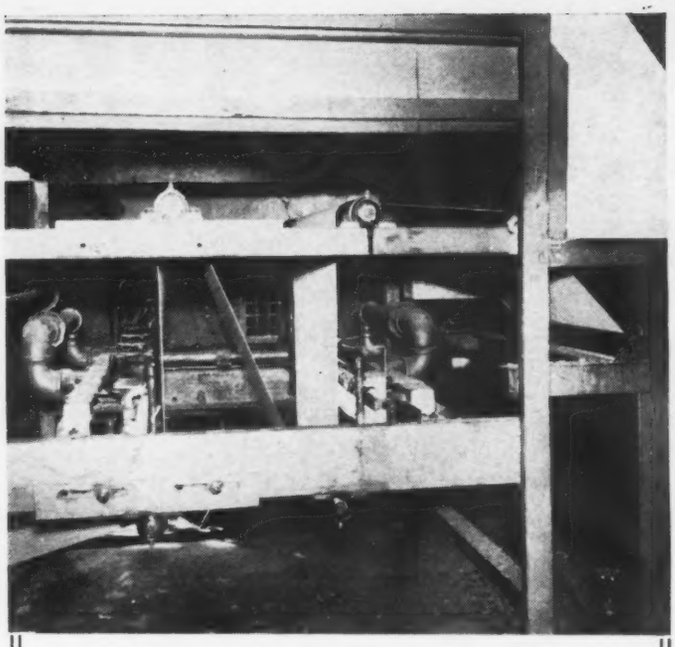

RED-RAY BURNERS
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SINGEING MACHINE
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For Maintained Shrinkage—
Perfect Finish—Long Life

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Sanforizer Blankets

HUYCK SANFORIZER and Palmer Blankets are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the coarsest denim, there is a special Huyck blanket to meet your specific needs.

Huyck Sanforizer blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

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KENWOOD WOOL PRODUCTS

F. C. HUYCK & SONS
KENWOOD MILLS
Albany, New York

sell the assets and business to Weetamoe Corp., which will transfer these assets to a new Nashua Mfg. Co. Several executives of the former company are expected to withdraw, including Robert Amory, president and treasurer, who has been with the company 40 years. Others who will leave include Arnold W. Hunnewell, assistant treasurer and secretary; Walter Whipple, vice president in charge of manufacturing, and Francis L. McDermott, sales representative. The new corporation will have the following officers: president, Royal Little, who is also head of Textron, Inc.; vice president, J. Linzee Weld, who holds the same position with Textron, and treasurer, Charles Dyson, also Textron treasurer. The total price to be paid for Nashua assets is said to be $15,800,00.

Ragan Spinning Co., Gastonia, N. C., has been purchased by J. P. Stevens & Co. Ragan operates 24 combs and 21,120 spindles on combed yarns for mercerizing.

Raybestos-Manhattan, Inc., Stratford, Conn., let contract to C. F. Burghart, Inc., Bridgeport, Conn., for two one-story additions, 52 x 80 ft. and 40 x 80 ft.

Reeves Bros., Inc., which owns seven Carolina textile mills, has merged them with the New York selling house of the same name.

Smith Mills Co. plans to begin operations near Lincolnton, N. C., in a newly constructed spinning and weaving plant. The mill has about 11,000 sq. ft. of floor space, and will be equipped with 2,000 spindles and 32 looms. A. H. Smith, who was formerly associated with Abernathy Mfg. Co., Laurinburg, N. C., owns the company.

Southern Cotton Co., Meridian, Miss., has been sold to Amer-Ind, Inc., New York, which firm will continue operation of the mill, despite reports to the contrary. C. D. Kent will continue his connection with the mill.

J. P. Stevens & Co., Inc., New York, N. Y., a textile selling house, will consolidate with nine textile manufacturing companies to form one of the largest textile corporations in the world, as previously reported. The new company, to be known as J. P. Stevens & Co., Inc., will be capitalized at approximately $135,000,000,-000 and will operate 28 plants having a total of 621,376 spindles and 15,116 looms. Companies involved in the merger include Victor-Monaghan Co., Greenville, S. C.; Dunean Mills, Greenville, S. C.; Piedmont Mfg. Co., Piedmont, S.C.; M. T. Stevens & Sons Co., Andover, Mass.; Aragon-Baldwin Mills, Whitmire, S.C.; Watts Mills, Laurens, S. C.; Republic Cotton Mills, Great Falls, S. C.; Wallace Mfg. Co., Jonesville, S. C.; Slater-Carter-Stevens, Inc., which owns Slater Mfg. Co., Slater, S. C., and Carter Fabrics, Greensboro, N. C.

Utica & Mohawk Mills, Utica, N. Y., and **Wamsutta Mills, Inc.,** New Bedford, Mass., have broken off negotiations for the merger of the companies.

United Merchants & Manufacturers, Inc., New York, N. Y., will rebuild its plants in Langley, S. C., which were either damaged or destroyed in the recent fire with loss of several million dollars.

Uxbridge, Mass. — Preparations are being made to operate the former Linwood Cotton Mill for the manufacture of cotton and rayon materials.

Wool Mill News

Berkeley Woolen Co., Inc., with headquarters in Martinsburg, W. Va., has purchased a 150-acre tract of land in Charleston, W. Va., as a site of a new mill.

Blue Bonnet Blanket Mills, San Marcos, Tex., has ordered 20 automatic looms, 2 sets of 72-in. cards, 6 spinning frames of 140 spindles each, 1 double-action napper, 1 10-ft. stainless-steel dye kettle, 2 stainless-steel fulling mills, 1 cloth dryer, and 1 stainless-steel carbonizer. The new equipment will double the present capacity of 1,500 blankets weekly.

Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., has made plans for the modernization of its mills to increase production.

Carleton Woolen Mills has received CPA approval to proceed with alterations which will provide space for additional

Completes the Picture

DuraBeau – *finished hosiery*

Reg. U. S. A. and Canada

A lady of charm and grace may be exquisitely dressed, her coiffure may be enchanting . . . but if her hose is unattractive, her entire ensemble loses its effect. For that reason, good taste decrees that hose be sheer, shimmeringly lovely, that it hold its shape well, that it repel spots and waterstains. Ladies of fashion instinctively choose the hosiery that has been finished with DuraBeau, for they find this hosiery fills their every requirement. And they learn too, that DuraBeau-finished hose is not only outstandingly lovely, but that it keeps its loveliness for the life of the stocking. DuraBeau really means "lasting beauty."

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Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.

JIFFY MARKER

The new, improved, more rapid, less expensive marking system.

Identify and safeguard your yardage at low cost. Quick and easy to use; permanent, boil-proof and dye-resistant.

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WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes.

Catalog on request.

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Caldwell TANKS AND TOWERS

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NEW WASHERS and EXTRACTORS

Bought from Government Surplus Stocks

IMMEDIATE SHIPMENT!

AMERICAN MONARCH Style F WOOD WASHERS

Size 44"x64". With valves, piping, thermometer washometer, spare parts, etc. O.P.A. PRICE, $2216.65 OUR PRICE..... **$1750.00**

30-In. TROY EXTRACTORS

Extra deep. Multiple V-belt drive. OUR PRICE..... **$1095.00**

E. J. PERRY TUMBLERS

36"x30", single pocket, double motor drive, reversing type. OUR PRICE..... **$445.00**

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High Speed, multiple V-belt drive. OUR PRICE.... **$650.00**

All above Machines arranged for 220/440 volt, 3 phase, 60 cycle
Complete set of spare parts for 1 year's operation.

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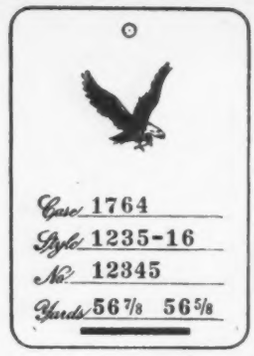

The New AMERICAN SPEED SET GEAR CONSTRUCTION NUMBERING MACHINES

Designed Especially For

MARKING TEXTILE MILL TAGS TICKETS, LABELS, Etc.

Modern textile merchandising demands CLEAR, EASILY READ piece, lot and case numbers, size and yardage lengths, etc. Supply this demand and use the new American Speed Set Gear Construction Numbering Machines. Such numbering with Speed Set machines can be done quickly and easily. Numbers change instantly with touch of fingers and ANY COMBINATION OF NUMBERS can be quickly obtained. All steel wheels, deeply engraved figures, self inking.

Eliminate errors and see that your tags, tickets, labels, etc., are attractively and legibly numbered the SPEED SET way. WRITE TODAY FOR FOLDER describing these new machines used in Cotton, Woolen, Hosiery, Knit Goods, and Dyeing and Finishing plants.

American Numbering Machine Co.
ATLANTIC & SHEPHERD AVES. BROOKLYN 8, N. Y.

AROMINE
DYE-BATH ASSISTANT

Wetting Agent . . . Dyeing Assistant . . . Water Normalizer . . . Produces Brighter Shades . . . For All Fabrics.

Effective in hard water, acid or alkaline baths.

BURKART-SCHIER CHEMICAL CO.
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TEXTILE INDUSTRY RESEARCH
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NEW YORK, N. Y.
CONSULTANTS ON TEXTILE MANUFACTURING AND MACHINERY
10 East 40th Street Murray Hill 4-0525

machinery. Cost is estimated at $138,000.

Cotwool Mfg. Co., Lisbon, Me., has awarded contract to H. P. Cummings Construction Co., Winthrop, Me., for a $105,000 boiler plant at its Farnsworth mill. Alonzo J. Harriman, Auburn, Me., prepared the plans.

Ettrick Woolen Mills, Ettrick, Wis., has been purchased by George Kutcher, of Sparta, Wis.

Fairforest Mills, Union, S. C., newly organized, has begun operation in a new plant making heavy wool knitting yarn. Jack Powell is treasurer.

Foster Yarn, Inc., Trenton, N. J., will begin work soon on a one-story mill in Hamilton township, for which contract was let recently to Belli Co., Trenton. Cost, with equipment, about $75,000.

William H. Grundy Co., Bristol, Pa., has been sold to Jacob Ziskind, Fall River, Mass.

Guerin Mills, Inc., Woonsocket, R. I., has passed into the control of a group headed by Edmund E. Hills, Hollis P. Nichols and Robert B. Dresser, which purchased controlling stock. Management of the mill will not be changed.

Hayward-Schuster Woolen Mills, East Douglas, Miss., plan expansion of present plant to cost about $300,000. CPA approval secured.

Kay Woolen Co., Charlton City, Mass., has leased a small mill in Wilsonville, Conn., at which place they are going to do commission weaving.

Lees-Cochrane Co., Glasgow, Va., has begun erection of an addition to cost about $1,000,000, with spinning equipment. Erection contract let to Daniel Construction Co., Greenville, S. C.

McCormick Spinning Mill, Inc., McCormick, S. C., has begun construction of its 512 x 232 ft., one-story worsted-spinning plant and hopes to have it completed in October. About 20,000 spindles will be operated and 300 people employed.

Pacific Mills is erecting a 150,000 sq. ft. plant in Halifax, Va. The building will be windowless and air-conditioned. A modernization program is being carried out at the Carrboro, N. C., plant, which includes the installation of air-conditioning.

William D. Sykes & Co., Inc., yarn and rug manufacturer, has bought the Collins & Aikman plant at Fountain and Canal Streets in Philadelphia, Pa., for $600,000.

Rayon & Silk Mill News

American Viscose Corp., Wilmington, Del., will soon start the ground work at Radford, Va. for its eighth plant. The company has received approval from CPA for a $414,095 addition to its plant at Nitro.

Burlington Mills Corp. has received a building permit at Asheboro, N. C., to construct a $100,000 addition to the Cetwick Silk Mill on W. Salisbury St., Asheboro, a unit of this company.

Cheney Bros, Manchester, Conn.—The H. K. Ferguson Co. has completed the new building, 308 x 182 ft., and installed machinery for printing, steaming, and finishing of fabrics. The cost of the development was approximately $750,000. This is part of Cheney's $2,000,000 modernization program.

Cleveland Cloth Mills, Shelby, N. C., has 120 new looms on order, delivery of which has already started. An additional 4,000 spindles are also being put into operation.

Hyderabad, India—Plans are under way for the establishment of a rayon plant in this city in which Lansil, Ltd., British rayon producer, will be interested.

Frank Ix & Sons, Charlottesville, Va., will have 1,000 looms in operation when equipment recently installed is in complete operation. Included will be a modern throwing unit, quilling, and warping machines.

Industria Colombiana de Rayon S. A., Barranquilla, Colombia, will double the capacity of its plant by the middle of 1947, when completion of an expansion program is expected. Rayon Consultants, Inc., 75 Maiden Lane, New York, are

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Spinners of Fine Woolen, Merino & Specialty Yarns

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E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
W. J. Westaway Co., ltd.....Hamilton and Montreal, Canada
Geo. Thomas & Co.....Manchester, England.—European Agt.

now engaged in designing the addition. This company has also designed a rayon yarn plant for Compania Rayonera Cubana in Matanzas, Cuba.

Midland Fabrics Corp., New York, N. Y., has CPA approval to proceed with construction of a $150,000 plant in Oxford, N. C., for which contract has been let to C. M. Guest & Sons, Greensboro, N. C.

North American Enka Corp., Enka, N. C., is reportedly seeking a location in North Carolina for a rayon processing plant which will cost several million dollars.

Spiegel, Inc., a Chicago mail-order house, has purchased the rayon-weaving mill of Joseph Berlinger Co., Towanda, Pa.

Knitting Mill News

Eberle Co., Philadelphia, Pa., will establish a branch hosiery mill at Columbia, Miss., in building to be constructed by municipality. Cost reported close to $100,000. Emmett J. Hull, Jackson, Miss., architect.

A. Blum has begun construc- of a building at Albany, Ga., to house a new hosiery mill which he will operate.

Carter Knitting Mills, Mt. Airy, N. C., has bought a building into which it will move machinery from a mill which was purchased in another town. Operations will start in about 60 days. W. F. Carter, Jr., president of the company, is severing his connections with Barber Hosiery Mills, Mt. Airy, to devote his entire time to the new plant.

Wm. Carter Co., Needham Heights, Mass., has begun operation of a new plant in Gilbertville, Mass. Twenty-five machines have been installed.

Catawba Hosiery Co., Catawba, N. C., has begun the construction of a new plant.

Chadbourn Hosiery Mills, Inc., Charlotte, N. C., have purchased mill of Fashion-Flow, Inc., Siler City, N. C., and will operate as branch plant. Expansion is planned.

William Cullen, formerly in charge of knitting at the Warren Fabrics Co., West Warren, Mass., is planning to open his own knitting mill shortly at Stoughton, Mass.

Dayton Hosiery Mfg. Co., Dayton, Tenn., changed ownership recently, when Alfred P. Slatner, vice president of Chester H. Roth Co., New York, acquired controlling interest.

Ford Hosiery Mill, Hickory, N. C., will soon begin construction of an addition to the main building and also a modernization program.

Glenlock Hosiery Mills, Haddon Heights, N. J., has begun erection of new one-story mill at Westmont, N. J.

Gurney Mfg. Co., Prattville, Ala., which has been producing yarn exclusively, is adding 200 knitting machines for the production of knitted cotton cloth.

Hill Hosiery Co., Thomasville, N. C., is erecting a three-story building which will provide over 22,000 sq. ft. of manufacturing space and which will be completed late this fall.

Holeproof Hosiery Co., Ltd., London, Ont., plans an addition which will cost $125,000, with equipment.

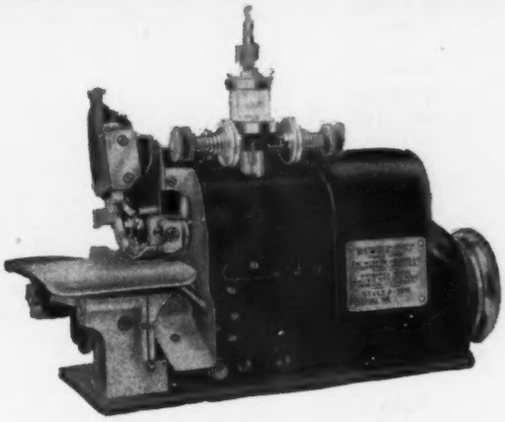
Irving Knitting Mill, Raleigh, N. C., has ordered 40 additional machines. Irving L. Sink, owner, plans improvements in the dye room.

Jackson-Speight Hosiery Mills, Inc., with temporary quarters in the Welch building at Mt. Airy, N. C., will begin the manufacture of hosiery at an early date.

Jamestown Hosiery Mill, High Point, N. C., recently organized, expects to begin production of full-fashioned half hose within 30 days. Machinery is now being installed in a 25 x 45 ft. building. The plant will later manufacture women's hosiery.

Jantzen Knitting Mills, Portland, Ore., has let contract to Bingham Construction Co., Portland, for two-story addition, 150 x 200 ft., to cost about $300,000, with equipment.

L. & E. Knitting Mills, 14 Wooster St., New York, N. Y., plans a new two-story mill and office on 45th Rd., near 21st St., in Long Island City. A site has been purchased.



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  (Reorganizations and New Developments)
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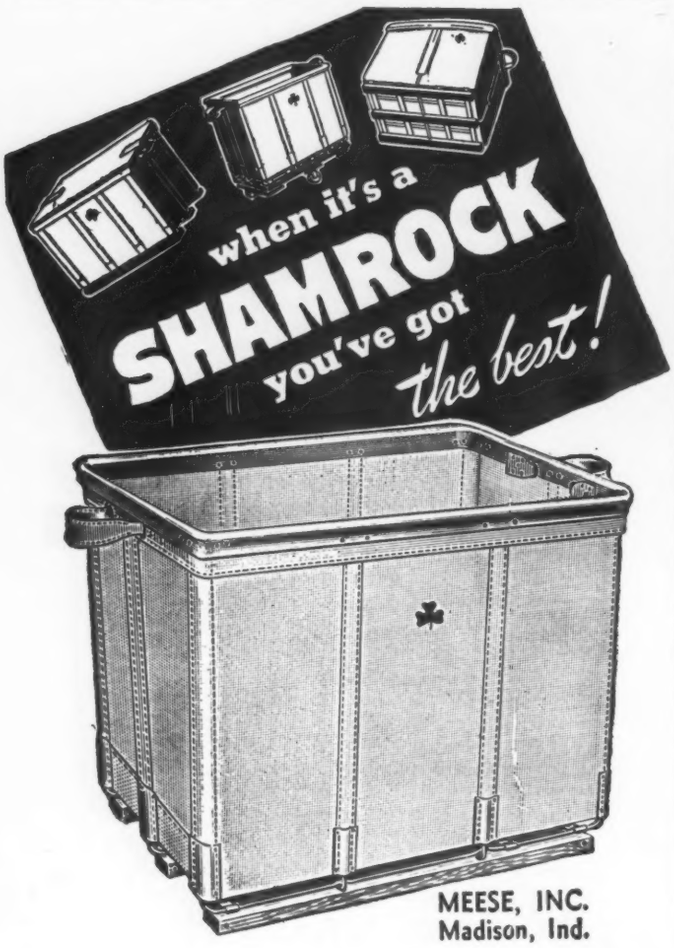

MEESE, INC.
Madison, Ind.

C. M. Maloff, president of the People's Bank of Cleveland, Ga., is constructing a hosiery mill at Helen, Ga.

Martha Mills, Inc., Asheboro, N. C., has begun production of seamless rayon hosiery in a small building.

Nodridge Knitting Mill, Los Angeles, Calif., has let contract to H. W. Baum & Co., Burbank, Calif., for proposed new one-story 68 x 81 ft. mill at San Gabriel, to cost $30,000.

Palmyra Hosiery Mill, Inc., Albany, Ga., has been granted a charter to manufacture hosiery. Hodges Builders Supply has been awarded contract to erect the building.

Ripon Knitting Works, Ripon, Wis., has purchased Portage Hosiery Co., Portage.

Saftlas Knitting Mills, Newark, N. J., has leased the second floor of a building at 59-63 Ogden St., which it will use for expansion.

Sanderson Hosiery Mills, Los Angeles, Calif., is having plans prepared for the construction of a knitting mill. George C. Follis, 1435 North Highland Ave., Los Angeles, is architect.

Seneca Sweater Co., Inc., Brooklyn, N. Y., has purchased a building at 114-20 Forrest St., Brooklyn, and will improve and equip it for use as a knitting mill to expand its present capacity.

Sigman-Perry Hosiery Mill and **Little River Knitting Mills** will start operations in the same building in Hickory, N. C. The former will produce men's hosiery, and the latter will make circular-knit jersey cloth. The 132 x 50 ft. building has 10,000 sq ft. of floor space.

Statesville, N. C.—F. B. Ingold, of Hickory, N. C., is preparing to open a hosiery plant for the manufacture of men's anklets and children's socks.

Thomasville Hosiery Mills, Inc., Thomasville, N. C., recently set up a new boarding room and has just completed a new dye room. A third unit, now under construction, will be used as a pairing room.

Wayne Knitting Mills has awarded contract to Daniel Construction Co., of Birmingham, Ala., for construction of a mill at Humboldt, Tenn., at cost of $1,000,000.

York Knitting Mills, Ltd., which has mills in Woodstock, Hamilton, and Toronto, Ont., will extend its operations to the United States and the United Kingdom.

Dyeing & Finishing Plant News

American Dyeing Corp., Rockville, Conn., has increased its capitalization to provide for expansion.

Arnold Print Works, North Adams, Mass., has received CPA approval for construction of a $35,000 boiler plant.

Bell Co., Worcester, Mass., has received priority from CPA to obtain $185,000 worth of material necessary to complete a 137 x 86 ft., three-story building. The structure will be a unit of Clinton Mills, Clinton, Mass., a branch of Bell Co., and will be used as a dyeing plant. This is the last of three units planned for this location.

Dye Masters, Inc., Inglewood, Calif., has been incorporated to dye and wind worsted yarns, and property has been purchased for the erection of a one-story plant with 12,000 sq. ft. floor space. Stockholders are Robert Mishell of Beverly Mills, connected with National Yarns Corp., and John Smith of Jamestown, N. Y., who has been plant superintendent of National Worsted Mills.

Hayward-Schuster Woolen Mills, East Douglas, Mass., plans addition of a $300,000 finishing department.

Moss-Foy Textile Co., Inc., Mount Airy, N. C., will erect a building, 60 x 48 ft., on Newsome St., to do skein dyeing and winding for hosiery mills and others. W. H. Foy is president, and W. D. Moss, Jr., secretary-treasurer.

New London Print Works, New London, Conn., have recently been formed with G. A. Harris, president and manager, and Sidney Scheinkman, treasurer. They are in full production on screen printing of all types of textiles.

Roanoke Mills, Roanoke, Va., will install a modern bleaching and dyeing department on the third floor of a new addition.

MILL MEN have found out about PARAMINE. . . . They know that to specify PARAMINE is to assure a highly desirable, wool-like texture for spun rayons, and an extra-mellow softness for all rayons, synthetics and cottons . . . and mill executives are pleased to find that PARAMINE gives this added sales value without increasing and often lowering finishing costs!

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Manufacturers of Industrial Chemicals for over 40 Years

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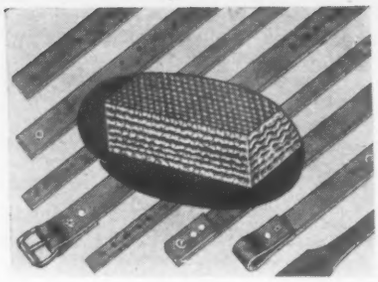
Does your present strapping have ALL of these features ?



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Plants for Manufacture of

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CHEMICAL PULP

TEXTILES

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NEWS ABOUT *Men*

Earl D. Dunmore has been elected president of the Utica Knitting Co., Utica, N. Y., to succeed the late Ralph M. Jones. Mr. Dunmore was previously vice-president and general superintendent. **Fred H. Grosse**, his assistant, succeeds him in those two offices.

G. P. Barnwell, Jr., of Bibb Mfg. Co., has been qualified as a textile consultant for the Civilian Production Administration to serve in connection with the American Cotton Manufacturers Association program for gradual release of the industry from government controls. Mr. Barnwell is a member of the association's task committee that has been working with CPA.

J. R. Newell has been elected president of Mandeville Mills, Carrollton, Ga., to succeed the late Frank M. Kimble. **G. E. Ball** has become vice-president. **Andrew W. Macy**, treasurer of Nashawena Mills, New Bedford, Mass., has been elected vice-president. **Raymond H. Chase**, formerly superintendent of the mill, is now manufacturing agent.

Dr. Frank H. Reichel has become chairman of the board of directors and chief executive officer of American Viscose Corp., Wilmington, Del.

Walter Bollier of Allentown, Pa., has been elected president of Phoenix Silk Corp., Allentown, Pa., to succeed Albert Tilt who died on June 23. Mr. Bollier had been vice president and general manager.

R. C. Kramer has been elected a director and chairman of the board of E. Gerli & Co., raw silk merchants, New York. Mr. Kramer is also chairman of the board of La France Industries, Inc., Philadelphia, and Belding-Heminway-Corticelli Co., New York.

Andre Blumenthal, vice president of Sydnei Blumenthal & Co., Inc., New York, has been elected assistant general manager of the company.

A. S. Thomas has relinquished his duties as general superintendent of the Werthan Bag Corp., at Nashville, Tenn., and has become vice president of Monticello Cotton Mills Co., Monticello, Ark.

FRANK R. SCULL, who has become sales manager of A. M. Tenney Associates, New York, sales representatives of Tennessee Eastman Corp. Mr. Scull, formerly with Tubize Rayon Co., has resigned from the Tubize Division of Celanese Corp. of America, where he was in charge of yarn sales.

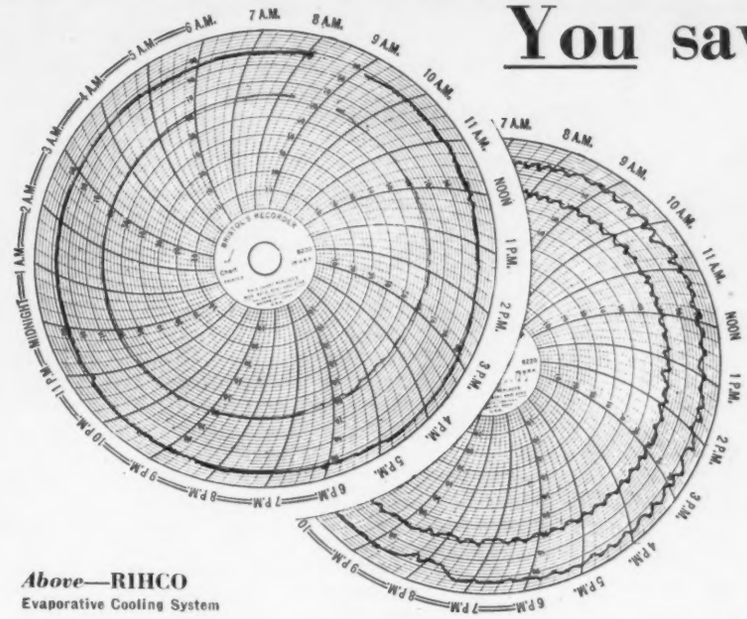
Richard A. Smith has been elected vice-president of Wilson Brothers, South Bend, Ind., in charge of knitting operations for plants in Chicago; Manchester, N. H.; and Troy and Cohoes, N. Y. Mr. Smith will make his headquarters at South Bend.

Gerald H. McGreevy and **De Forest Lot** have been elected vice presidents of Textileather Corp., Toledo, Ohio. Mr. McGreevy will direct sales and Mr. Lot will be in charge of the research department. Pantasote Co. has recently merged with Textileather Corp.

E. R. Van Vliet, who recently resigned as treasurer of Celanese Corp. of America, has been elected vice-president and treasurer of E. R. Squibb & Co., pharmaceuticals, Brooklyn, N. Y.

Allyn J. Morse has recently been made vice-president and general manager of the Southern operations of the Clark

You save money too!



Above—RIHCO
Evaporative Cooling System

Right—RIHCO
Conventional Humidifier System
Temperature curve is outside.
Relative Humidity curve is inside.

- **The charts** are from adjoining rooms in a South Carolina mill maintaining 60% in the spinning and 70% in the twisting room.
- **The Rihco CONVENTIONAL SYSTEM** (right) operates with controlled humidity only.
- **The Rihco EVAPORATIVE COOLING SYSTEM** (left) operates with controlled air change and both temperature and humidity are controlled. Note the uniformity of both curves indicating tremendous comfort for the operators and more efficient working conditions.

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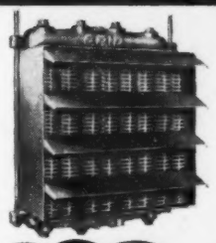

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★One piece construction heating sections (patented) of high test cast iron that withstand steam pressure up to 250 lbs.

★No soldered, brazed, welded or expanded connections to become loose or develop leaks.

★No electrolysis to cause corrosion, breakdowns, leaks, or heating failures.

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MORE THAN 50 YEARS OF UNFAILING SERVICE

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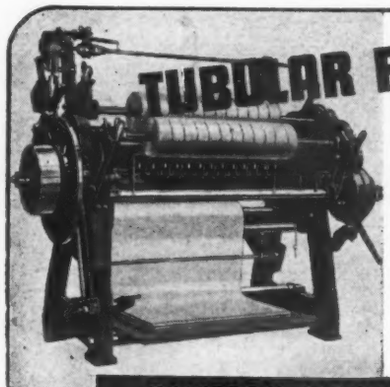

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slits and winds two sets of rolls, widths from ½" up from one length of RAYON TUBING at speeds up to 175 f.p.m.

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61 POPLAR STREET, BROOKLYN 2, N. Y.
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Thread Co. He will continue to reside at Toccoa, Ga., but will have charge of the company's plants as follows: Clark Thread Co. at Austell, Ga.; Clark Thread Co. at Pelham, Ga.; and North Georgia Processing Co., Inc. at Toccoa. Mr. Morse is treasurer of the Southeastern Section of AATCC. **Gabriel Asensio** has been made manager of the Austell plant, and **Burt Stephens**, manager of the mill at Pelham.

Archie O. Joslin has been named treasurer of Orr Cotton Mills, Anderson, S. C., and **Robert Bendheim** has become assistant treasurer.

Max Lipshitz has been elected president of Lykens Hosiery Mills, Inc., successor to Lykens Hosiery Mills. **Ira Lipton** and **Harold A. Lipton** are treasurer and secretary, respectively.

Charles W. Palmer, a vice president of Canadian Celanese, Ltd., since 1930, and a member of the board of directors since 1938, has been elected executive vice-president, and a member of the finance and executive committee. **William McC. Cameron** has resigned as vice-president of the company, but will continue as a director and member of the finance and executive committee. **William Ashworth** was named vice-president in charge of sales.

John N. Hutchison, former newspaperman di charged from the Army as lieutenant colonel after serving on the staffs of Generals George S. Patton, Dwight D. Eisenhower, and Jacob L. Devers as a public relations officer, has joined the publicity department of the National Cotton Council, Memphis, Tenn.

Robert C. Jackson, Hartsville, S. C., has assumed management of the National Cotton Council's Washington office. He has been associated with Coker's Pedigreed Seed Co. during the last two years. He will act in the capacity of Washington assistant to the executive vice-president of the council, Wm. Rhea Blake..

John A. Bigelow has been appointed industrial relations manager of Amoskeag-Lawrence Mills, Amory Worsted Mills and Amoskeag Mills, Manchester, N. H. Before joining these mills, Mr. Bigelow was associated with the Chicopee Mfg. Corp., Manchester, and prior to that with the Wright Aeronautical Corp.

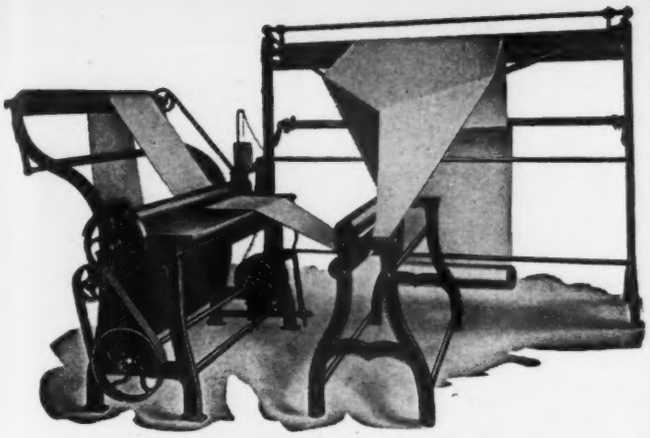
HAYDEN B. KLINE, who has been elected to the newly-created post of executive vice president of Industrial Rayon Corp., Cleveland, Ohio, and to membership on the executive committee, which has been increased from three to four. Mr. Kline, who joined the company as a research chemist in 1925 and was the leading figure in development of the company's method for continuous spinning and processing viscose rayon filament yarns, has been vice president since 1930 and a director since 1933.

Brig. Gen. Roland Walsh has relinquished command of the Philadelphia Quartermaster Depot as a result of illness. He is in Walter Reed Hospital, Washington, D. C. **Col. Turner R. Sharp**, former commanding officer of the Belle Meade, N. J., General Depot, assumes command of the Philadelphia installation.

Rear Admiral Walter A. Buck, lately assistant chief, has been appointed chief of the Navy Bureau of Supplies & Accounts, Washington, D. C. He succeeds **Rear Admiral William J. Carter.**

Lt. Col. Stephen J. Kennedy, who has been serving in Quartermaster Corps under Brigadier General Doriot head of military planning division, has been appointed assistant director for textiles, clothing, and footwear in the Research & Development Branch of the office of the Quartermaster General, Washington, D. C.

Russel W. Varney, New York, is interested in conjunction with Harold Aposdorf and Leize Stewart in the photographic method of printing directly on fabrics patented by the latter. The process was described in TEXTILE WORLD for April, 1945.



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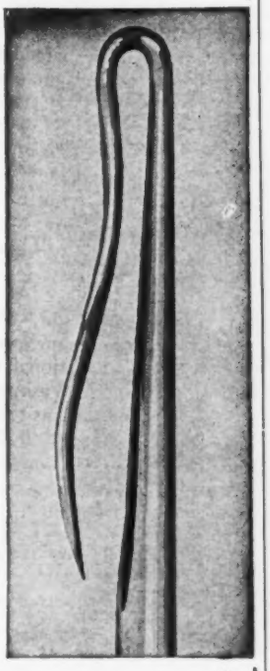

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DOWN COMES OVERHEAD

WITH BRINTON CIRCULAR KNITTING MACHINES

BRINTON Circular Knitting Machines keep quality high—increase production—lessen shut-downs—and reduce overhead. They keep on performing day after day—with a minimum of attention. That's why you'll find Brinton's in the largest mills, where accurate and scientific records are kept to tabulate the performance of every unit. • We have been making Brinton's for over fifty years, and will be happy to figure with you on your immediate requirements.

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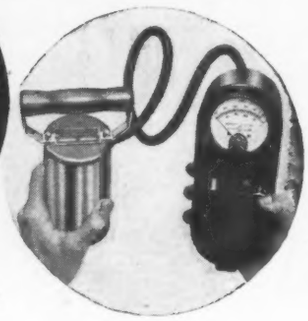

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TEXTILE MILLS • RAYON PLANTS • KNITTING MILLS • DYE HOUSES
BLEACHERIES • STEAM UTILIZATION • STEAM POWER PLANTS
WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

NEWS ABOUT MEN

Harold Whitcomb has been appointed divisional vice-president of Marshall Field & Co., Chicago, Ill. He will continue in his present capacity as assistant general manager of the manufacturing division.

Charles L. Keating has been appointed agent of Mountain Woolen Mills, Inc., Ludlow, Vt., and **Robert M. Bent, Jr.**, has been made superintendent.

Garbutt W. Mayes, Fitzgerald, Ga., son of **J. H. Mayes,** former vice-president and general manager of Fitzgerald Cotton Mills, has been appointed general manager of the mills.

John Christison, formerly superintendent of yarn production at Arlington Mills, Lawrence, Mass., has assumed the duties of general yarn superintendent. **G. Fred Hemas,** up to now superintendent of cloth production, has been appointed superintendent of yarn and cloth production. **Ernest E. Jackson** has been elevated from assistant superintendent of the top mill to superintendent, succeeding **Clifford W. Brown,** who was recently appointed assistant agent.

Paul H. Hill has been appointed general manager of Bigelow-Sanford Carpet Co., Thompsonville, Conn.

R. C. Jones has been appointed general manager of the rayon division of Celanese Corp. of America to succeed **John E. Bassill,** who is retiring on Sept. 1. Mr. Jones is a former vice-president of Tubize Rayon Corp., which merged with Celanese earlier this year. Mr. Bassill was president of Tubize from 1932 until the merger.

R. H. McDonald will be assistant to the plant manager of Winnsboro Mills, Winnsboro, S. C.

D. A. Perry has been appointed manager of Louis Roessel & Co., Ltd., Drummondville, Que. **Leonard Labonte** was named superintendent of the mill.

Paul G. Woodward, manager of the American Viscose Corp. plant at Parkersburg, W. Va., has been appointed acting manager of the company's Lewiston, Pa., plant, effective Sept. 1. **William D. Silcox,** who has been manager at Lewiston for the last six years, will assume corporation duties, and **Arthur H. Mergy,** manufacturing superintendent of the Parkersburg plant, will become acting manager there, succeeding Mr. Woodward. **Furman G. Carroll,** assistant to the manager of the Marcus Hook, Pa., plant, will be transferred to Parkersburg, succeeding Mr. Mergy.

M. A. KIRKLAND, formerly production manager of the U. S. Rubber Co. textile plant at Winnsboro, S. C., has been appointed manager in charge of operations of that plant. He is succeeded in his old post by W. C. HAYES, formerly assistant superintendent. A. E. JURY, who is retiring as plant manager, will continue as manager of the new products department.

Dexter Stevens, Jr., formerly an operating executive with Uxbridge Worsted Co., Inc., is now connected with Heywood Mills, Tilton, N. H., as manager. He is the son of the late Dexter Stevens, who was treasurer of Pequot Mills, Salem, Mass., at the time of his death.

William H. Ziock, Jr., formerly with Portage Hosiery Co., Portage, Wis., is now manager of Rockford Mitten & Hosiery Co., Rockford, Ill.

William R. Tornquist, formerly plant superintendent of Clearwater Mfg. Co., Clearwater, S. C., is now manager, succeeding **J. W. Houth.**

Clarence M. Asbill, Columbia, S. C., has been appointed to the staff of the Textile School of North Carolina State College, Raleigh, N. C., as research professor of textile machine design.

Weston Taylor has become superintendent of Pee Dee Mfg. Co., Rockingham, N. C.

F. O. McShane has been appointed manager of the Sayles Biltmore Bleacheries, Inc., Biltmore, N. C., succeeding **S. M. Fessenden,** who is now located in the company's New York office.

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Complete color assortments

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For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

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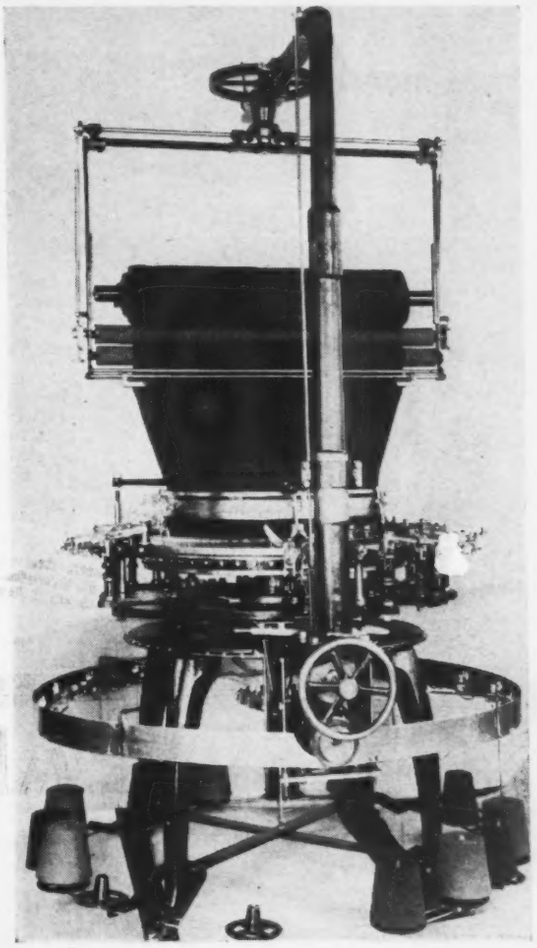

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KNITTING MACHINE

1. **50% reduction in cost of production on most coarse or fine fabrics.**
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4. **Basis of all statements is on actual mill performance and production on S-1 models now installed.**

All reasons that will save you money! The new S-1 single head spring needle machine is especially designed for overcoating materials. At the same time, any fabric can be knit on it that is knit on the older type spring needle table. Production is approximately 100 yards per 8 hour day, using 6 feeds.

For further details write us direct.

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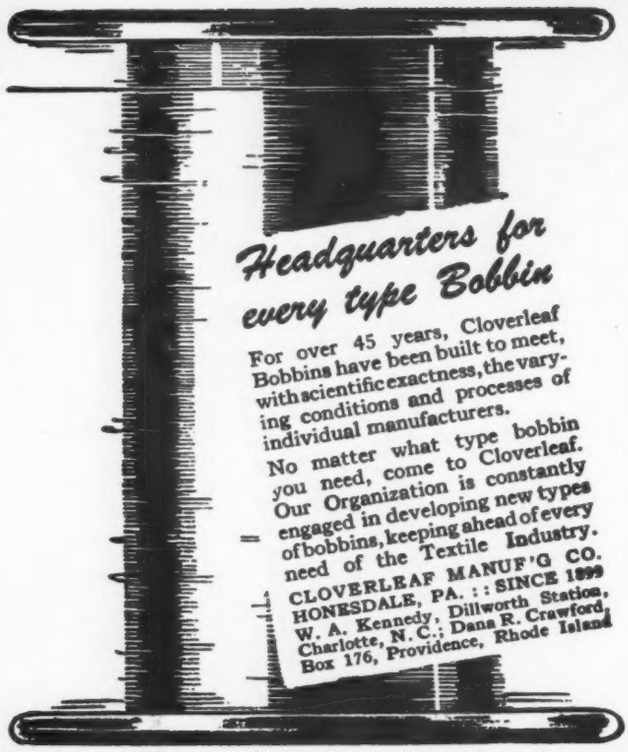
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For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.
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by the well-known Hygrolit Cloth Conditioning Machine, Model P-3. A uniformly controlled Hygrolit mist softens the fabric, creates a rich and fluffy hand, and restores natural moisture lost in previous operations.

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Here at the Prince George guests enjoy the homey luxury and genuine comforts seldom found in other New York hotels. 1,000 spacious, tastefully furnished rooms, all with bath. Five famous restaurants and a cafeteria. Quiet, yet within 3 minutes of the shopping district. Low rates make the Prince George New York's most outstanding hotel value. Write for booklet TW.

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Charles L. Rogers, Jr. — *Manager*

NEWS ABOUT MEN

Robert E. Tobin, of Lewiston, Pa., plant of American Viscose Corp., has been named resident manager of the Hathaway Mfg. Co., New Bedford, Mass.

Walter Howard Johnson and **James J. Bell, Jr.,** have been added to the engineering staff of the Tubize division of Celanese Corp., Rome, Ga.

Clark C. Kirby has returned from military service to his former position as assistant area superintendent of throwing at the E. I. du Pont de Nemours & Co. plant in Waynesboro, Va.

R. B. Fort, Jr. has succeeded **O. I. Ward** as assistant to the plant manager of the Shelbyville, Tenn., plant of Shelbyville Mills. Mr. Ward is now superintendent of the company's Scottsville, Va., plant.

Jess de la Rama, of Raleigh, N. C., and **Paul T. Biggers** of Sanford, Fla., have been named members of the faculty of the North Carolina State School of Textiles, Raleigh, N. C., as research assistant and assistant professor of textiles, respectively.

Charles S. Parsons, general superintendent of the Hathaway Mfg. Co., New Bedford, Mass., since 1941, began his new duties Aug. 1 as general manager of the Chicopee Mfg. Corp. of New Hampshire, in Manchester.

Bruce C. Baker, for several years manager of the three Springs Cotton Mills at Chester, S. C., and the Springstein, Eureka and Gayle plants, who resigned because of ill health, has recovered and accepted the position of general manager of Newberry Textile Mills, Newberry, S. C.

Dr. Emerson A. Tippetts succeeds **Dr. Edward F. Wesp** as assistant director of viscose rayon research of E. I. du Pont de Nemours & Co., Wilmington, Del.

Bernard S. Hillman will continue as general manager of Kenyon Finishing Co., Lawrence, Mass., recently purchased by Jacob Ziskind. **Oscar D. Graichen** will be in charge of plant operations.

A. W. Young, resident manager and superintendent of Franklin Process Spinning Mill, Inc., Fingerville, S. C., has retired after serving the company for 20 years. **R. A. Calvert** succeeds Mr. Young.

John F. O'Donnell has resigned as plant superintendent and personnel manager of Associated Textiles, Ltd., Louiseville, Quebec, Canada, to return to the United States. He was with the Canadian company for 17 years first as superintendent of throwing and for the last 12 years as given above. He is succeeded by **Oscar Marc Aurelle.** Mr. O'Donnell will make his headquarters in Scranton, Pa.

Obituary

Ralph Jones, 60, president of Utica Knitting Co., Utica, N. Y., died Aug. 23. He spent his entire business career with that company joining it in 1904. He was chairman of the executive committee of the Underwear Institute and for many years active in association work. He was also chairman of the underwear industry's advisory committee to the OPA and was returning to Utica from a meeting of that committee in Washington when stricken.

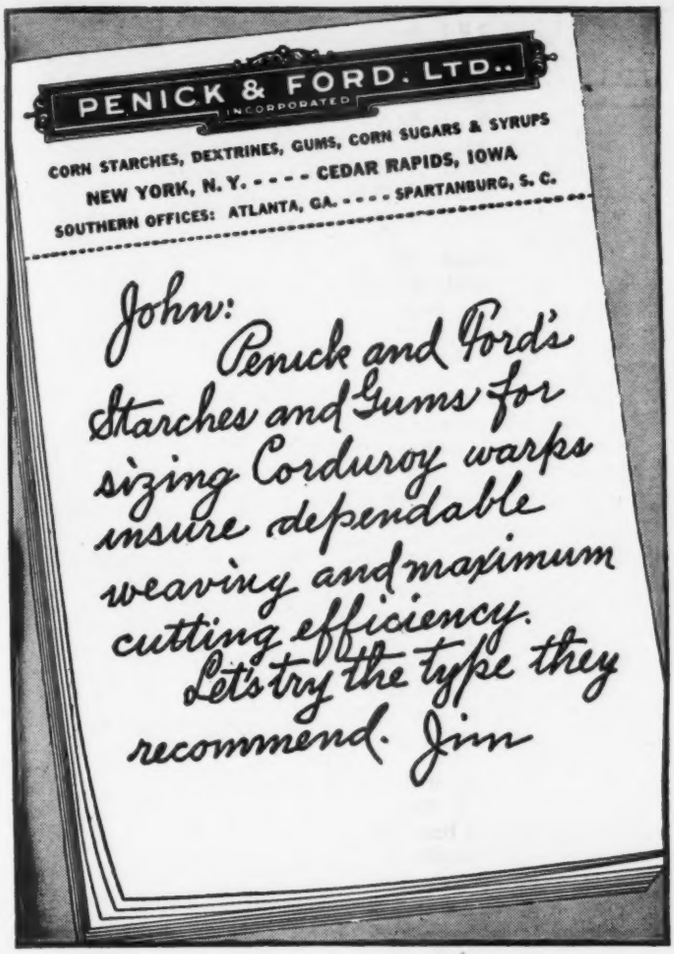
John H. Burton, 77, chairman of the board of Burton Bros. & Co., died recently at his home on Long Island, N. Y. He retired as president of the company last year, but continued as chairman of the board. He has been associated with the organization for 56 years.

Frank G. W. McKittrick, 70, founder and treasurer of Frank G. W. McKittrick Co., Lowell, Mass., died Aug. 26. He founded the business in 1922. It now comprises the McKittrick Hardware Co., the J. C. Bennett Hardware Co., the Lowell Woolen Mills (Lowell) and the Rollstone Worsted Mills (Fitchburg).

Paul L. Borden, 66, secretary-treasurer of Borden Mfg. Co., Goldsboro, N. C., died recently.

William C. Hazer, 89, died recently at his home in Washington, D. C. He was at one time associated with Himes Knitting Mills, Troy, N. Y., Mentor Knitting Mill, Mentor, Ohio, and Munsingwear, Inc., Minneapolis.

Adolph Widder, 58, senior member and general partner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John: Penick and Ford's Starches and Gums for sizing Corduroy warps insure dependable weaving and maximum cutting efficiency. Let's try the type they recommend. Jim

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Assures rapid, dependable de-sizing.

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Our technical staff always at your service.

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Finer Cloth BRINGS Faster Sales!

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➡ STRONGER YARNS
Superior lubrication.
Less fibre breakage.

➡ SMOOTHER YARNS
Retain moisture control longer.
Aids artificial control.
Improve spinning.

➡ BETTER LUBRICATION
More even distribution.
Thorough penetration.

➡ FREE SCOURING
Decreased oxidation.
Less alkali increases tensile strength.

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"YOU CAN COUNT ON WAK COUNTERS"

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RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters: yardage, rotary, ratchet and special counters.
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WAK INDUSTRIES
CHARLOTTE, N. C.

of Widder Bros., Croydon Fabrics, Inc., and president of Ming Toy Silk Mill, Inc., Paterson, N. J., died recently.

Andrew Gair Blue, 49, for several years vice-president and plant manager of Fontaine Converting Works, Inc., Martinsville, Va., died of a heart attack Aug. 6.

George E. Chase, 75, retired superintendent of Lawrence Mfg. Co., Lowell, Mass., died recently. Mr. Chase had been employed by the Lawrence concern for 42 years before retirement.

Marion A. Steele, a chief superintendent at the Richmond, Va., branch of the E. I. du Pont de Nemours & Co., died Aug. 5.

A. A. Moore, 53, official of Crescent Knitting Co., Statesville, N. C., until his retirement two years ago, died Aug. 9.

Hargreaves Gill, assistant superintendent of Westboro Weaving Co., Greenville, S. C., died July 19.

Jesse W. Truslow, 31, for a number of years associated with Sylvania Industrial Corp., Fredericksburg, Va., died recently.

Leslie Sutton, manager of Anniston Cordage Co., Anniston, Ala., died recently.

Peter M. Gunderman, retired overseer of No. 8 Amoskeag Mill in Manchester, N. H., died Aug. 1. He was a native of New York but had lived in Manchester for 70 years.

Willis D. Buttrick, foreman at Hillsborough Mills, Hillsborough, N. H., for about 20 years, died recently in South Weare, N. H.

Isaac Kilby Edwards, Sr., 72, former night superintendent of Arkwright Cotton Mills, Spartanburg, S. C., died Aug. 13.

Richard D. Twohig, overseer of carding and spinning for more than 60 years, who retired in November, 1936, died at his home in Norwich, Conn., recently.

Anderson B. Brown, 54, superintendent of Mayo Mills, Inc., Mayo, S. C., died at his home in Lincolnton, N. C., recently. Mr. Brown had also been associated with mills in Hillsboro, Lincolnton, and Thomasville, N. C.

John Reynolds, long technical adviser for J. P. Stevens & Co., Inc., and an author of numerous authoritative articles on weaving subjects in TEXTILE WORLD during his younger years, died Aug. 16 at his home in New Bedford, Mass.

Stanley J. Wrubel, worsted mill superintendent and overseer for more than 30 years, died recently at his home in Whitehall, N. Y. Mr. Wrubel has been associated with a number of American Woolen Co.'s mills. More recently he was with Champlain Spinners, Inc., Whitehall.

Thomas W. Needham, 65, died recently at Hope, R. I. He had been employed for 35 years as general foreman and chemist at the Pawtuxet Valley Dyeing Co., Phenix, R. I.

W. Ralph Armstrong, 52, until recently owner and operator of Waxhaw Cotton Mills, died in Waxhaw, N. C.

Andrew P. Howarth, 71, Worcester, Mass., former proprietor of Andrew Howarth & Son Co., Oxford, Mass., died recently.

Cornelius P. Toomey, 68, who had served for many years as secretary and general sales manager of Hind & Harrison Plush Co. at Clark's Mills, N. Y., died recently.

A. Roy Hitchcock, secretary and treasurer of Sterling Mills, Illion, N. Y., died recently.

Norman J. Verrier, 53, for the last five years an expediter at Universal Winding Co., Cranston, R. I., died at Providence, R. I., July 23.

Albert A. Elmont, 46, superintendent of Garland Knitting Mill, Jamaica Plain, Mass., died recently.

Albert H. Spurr, 39, president of Agawam Dye Works, Inc., Lowell, Mass., died July 24 at Ipswich, Mass.

Arthur Stubbs, 71, founder of Rayon Processing Co., Inc., Hawthorne, and Ultra Chemical Works, Paterson, died recently in Paterson, N. J.

A. H. (Al) Petershagen, a long-time member of the sales organization of Union Special Machine Co., who had served the St. Louis territory of that company for 30 years, is dead.

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Always A Winner!

The **WEAVER'S FRIEND**

- ☆ Penetrates Thoroughly
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Rates—See page 328

FOREMAN WANTED

For New England Throwing Plant on Rayons and Acetates. Third shift. Excellent opportunity for man with considerable knowledge of throwing and ability to handle help.

P-799, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED

TEXTILE SALESMAN

Experienced in Jigg Dyeing of acetate, rayons and cottons. Must have following in Metropolitan New York area—give resume of past connections.

SW-814, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS VACANT

WANTED: EXPERIENCED Wildman Knitting Machine mechanic and overseer. Must be thoroughly experienced in the making of circular elastic garments. Good opportunity for a man with integrity and supervisory ability to take charge of new plant. P-824, Textile World, 330 W. 42nd St., New York 18, N. Y.

SPECIALISTS IN bleaching of textiles etc., to work on a fee basis. Important research organization requires outside assistance. State qualifications, specialty, background and references. P-825, Textile World, 330 W. 42nd St., New York 18, N. Y.

DESIGNER AND Assistant Superintendent wanted for 65 loom plant located in Maine. Must be young man, ambitious and industrious. Good chance for advancement. P-826, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: WEAVING Room Superintendent: to directly supervise all of the work of weaving and finishing special fabrics made of paper yarn, and to have charge of pattern design and manufacturing processes for a well-established business, located in an exceptional city of a north central state. Applicant must have a combination of technical and practical experience, plus the ability to handle people, and a friendly but strong personality that will assure his success and worthiness of this excellent opportunity. State training, experience, references and salary expected. P-827, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED

MASTER MECHANIC

To take charge of machine shop and maintenance work of rayon weaving mill.

P-768, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

YARN MILL Superintendent available. Experienced in carded and combed work. Can furnish best of references as to ability and character. Any location. Young and aggressive. Have personal reason for desiring change. PW-788, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPT. COTTON and spun rayon blended weaving, slashing spinning and carding wanted by a young man at present employed as supt. Experience with dress sheer goods, shirting twills sateens, linings broadcloth novelty fabrics experience with Draper C&K. auto box looms, Whitin spinning carding. PW-828, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPT. OR Overseer weaving warping, slashing, cotton, rayon, nylons spun rayons dress goods satins shirting twills linings crepes novelty fabrics drape Stafford box looms. At present employed as boss weaver, assuring quality production and low cost. PW-829, Textile World, 330 W. 42nd St., New York 18, N. Y.

PURCHASING AGENT & Administrative Manager: Age 30, single, college graduate, six years experience purchasing finishing oils, dyes, tallow, softeners, machinery, hardware and excellent administrative capabilities correspondence, personnel, planning materials control. Native Southerner, Ex-Naval Supply Corp., best references. Salary $250 mo. with quarters or $300 straight. Write or wire James Booth, 23-52 122nd Street, College Point, L. I., N. Y.

YOUNG TEXTILE Engineer, veteran, experienced in production and research, desires responsible position. PW-830, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER OR Head Fixer of knitting. 23 years experience, 8 years mechanical development in large textile mill. Thoroughly familiar with all equipment of hosiery, underwear, knitting and sewing machines. PW-831, Textile World, 330 W. 42nd St., New York 18, N. Y.

KNIT COATING Superintendent or Manager, presently connected with large mill desirous of change. Fully experienced in blending, finishing and knitting on both spring and latch needle machines. Have good practical and technical experience in all types of knit overcoating and topcoating. PW-832, Textile World, 330 W. 42nd St., New York 18, N. Y.

Dyeing, Printing and Finishing Executive

Thoroughly experienced in plant management, processing and production, full knowledge of all equipment and its operation, desires new contact where knowledge and ability can be used to full advantage. Interested in new projects or reorganization of present set-ups.

PW-800, Textile World
330 West 42nd Street, New York 18, N. Y.

MANAGER—wants job . .

Broad experience in all phases of hosiery, glove and allied lines.

Can stand investigation.

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Personnel Consultant

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POSITIONS WANTED

RIBBON MILL man desires position as foreman or assistant to superintendent. 25 years experience in mills weaving fancy and plain fabrics. Age 52 years, married. Location of employment immaterial. PW-833, Textile World, 330 W. 42nd St., New York 18, N. Y.

AVAILABLE MANAGER, superintendent, designer, twenty-five years experience from fleece to piece. Woolen or worsted, yarns or cloth. Men and women's wear. Presently employed in the Middle East. Textile college education, seeks new position. PW-834, Textile World, 330 W. 42nd St., New York 18, N. Y.

TECHNICAL ASSISTANT to plant manager. Capable of handling development of new methods and processes in greige mills and finishing plants. Experience includes cotton, wool silk, and synthetics, on yarns, cards and fabrics. PW-835, Textile World, 330 W. 42nd St., New York 18, N. Y.

SELLING OPPORTUNITY WANTED

WANTED: CONTACT with mills manufacturing hosiery, underwear (mens, ladies, children and infants) and allied lines by aggressive sales organization offering live wire sales representation and distribution, in domestic and foreign markets. Cosmopolitan Sales Company, 450 Seventh Avenue, New York 1, N. Y.

WANTED

WANTED: ONE Process Picker, either two or three beater machine in good condition for immediate operation. W-836, Textile World, 330 W. 42nd St., New York 18, N. Y.

INFORMATION: IS desired concerning Lawrence H. Kelly previously of Providence, R. I. Please write W-837, Textile World, 330 W. 42nd St., New York 18, N. Y.

FREE BULLETIN

"SURPLUS PROPERTY"—How-What-Where: A 32 page 5x8 indexed giving complete information on the purchase of government surplus in all available classifications. Write the Office of Information—War Assets Administration, Washington 25, D. C.

TO BRAID AND NARROW FABRIC MFRS.

Sales Agent offers excellent representation on all types of braids and narrow fabrics. Can style and develop new numbers and products. Many years of successful selling and have always done a volume of business. Highest recommendations. Interested in arranging position with one concern exclusively.

RA-838, Textile World
330 West 42nd Street., New York 18, N. Y.

POSITIONS OPEN — MEN WANTED: Manager Southern spun rayon mill, excellent salary; wool scouring foremen and superintendent (New England); general superintendent New England woolen mill; cost accountant (New England); master mechanic large Western woolen mill; overseer weaving paper products, fine salary; overseer worsted dressing and spooling (Penn. mill) $75; time study men for Alabama; shoddy-wool salesman to cover West and South; Cooper knitting machine fixer for N. Y. State; general superintendent, boss cutter, boss knitter, boss finisher, boss stitcher, knitting machine and sewing machine fixers for underwear, sweater and outerwear mills; boss carders New England cotton mills; superintendent Northern worsted yarn mill, French system $7500 year; print works colorist (New England); woolen designers and stylers for New York City; boss spinners and second hands for New England woolen mill; boss carders (woolen) for New England and Mid-West $65-$80 week; second hand weaving Draper looms $70; Wildman knitting machine mechanic and foreman (New England); overseer burling and sewing for Mid-West woolen mill; boss carder Texas cotton mill; Tompkins knitter foreman for Canada; overseer skein silk dyeing $75-$100 week, (mill in Penn.); chemist (New England); Tricot knitting machine mechanic and foreman; colorist for California; worsted yarn foreman or superintendent, Bradford system for So. America; office manager (New Jersey); boss picker, New England woolen mill $70; overseers worsted drawing and spinning for New England; garnett foremen for New Jersey and New England; assistant superintendent large Northern woolen yarn mill; superintendent hand loom weaving plant (Penn.); master mechanic for Alabama cotton mill; mule fixers, second hands for all departments, card grinders, dresser tenders and many others.

Charles P. Raymond Service, Inc. **294 Washington Street, Boston, Mass.**

Over 45 years Confidential Employment Service for textile mills seeking executives and executives seeking new connections

(Additional Employment Ads on pages 317 & 318)

WANTED

Full-time, Lecturer-in-Charge, Textile Department technical Education Branch, Department of Public Instruction, Sydney, New South Wales, Australia. Salary £A850 to £A900 according to qualifications and experience and subject to deduction under Superannuation Act. Actual first class travelling expenses of appointee and his family to Sydney will be allowed. Selected applicant will be allowed right of limited private practice.

Applicants should be graduates of a recognized university or technical college. They should have a sound knowledge of all branches of textile industry and extensive experience in at least one branch. Appointee will be responsible for development and organization of modern courses of instruction at craftsman and post-diploma levels and for conduct of investigations and research for local industry.

Applications should be forwarded direct to

PUBLIC SERVICE BOARD
19 O'Connell Street, SYDNEY

Not later than 30th September, 1946.

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FOR

Outstanding Textile Man

Superintendent Required:
With broad technical experience in synthetic weaving and preparation.

Must have proven record of success with most modern methods.

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WANTED

Card Room Overseer

for carded yarn mill. Experience and good references required. Good pay and opportunities.

P-727, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED — EXPERIENCED MAN

Capable of doing experimental development work on automatic, seamless knitting machines. Must have creative ability and be able to get practical results. Write

P-812, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Young Man for

Assistant Superintendent

Must be Textile School Graduate with practical experience in Scouring, Carding, Combing, Drawing, Spinning (Bradford System). Give full particulars in first letter. Reply

P-733, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

EXPERIENCED FOREMAN

For drawing and spinning (Bradford System) ring and cap spinning. Give full particulars listing last 10 years experience in first letter. Reply

P-732, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

EXECUTIVE FOR SPINNING, WEAVING AND FINISHING OF WORSTED AND WOOLEN GOODS

Must be practical mill man with experience in the following: Setting up plant, cost calculation, sources of supply, sources of outlet and market requirements. Mill to be located in Eastern Massachusetts. Unusual opportunity and liberal compensation for the right man. Write full details as to experience and background.

P-802, Textile World
330 West 42nd St., New York 18, N. Y.

3 EXPERTS WANTED

A first class New England woolen mill-manufacturers of high grade goods wants to engage an expert finisher, an expert dyer, and an expert examiner. Only those who have held similar positions in a first class mill may apply.

P-811, Textile World
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JACQUARD BOX LOOMFIXER

Steady Job Good Pay

Apply

HARLENN MILLS, INC.
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SUPERINTENDENT WANTED

FOR PROGRESSIVE JACQUARD & DOBBY WEAVING MILL, IN NORTHERN NEW JERSEY AREA. APPLICANT SHOULD BE FAMILIAR WITH DESIGNING FOR THE DECORATIVE FABRICS FIELD. EXCELLENT POSITION FOR THE RIGHT MAN. KINDLY MAIL APPLICATION TO

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Thread Dept. Opportunity

Young man. Mill in Pennsylvania requires services of a young man to take full charge of thread department, must understand yarns Universal Winding, sizing. Good opportunity for the right party. State experience and salary expected. Write

P-821, Textile World
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WANTED

EXPERIENCED FOREMAN

For Scouring, Carding, Combing Departments. Give full particulars listing last 10 years' experience in first letter. Reply

P-731, Textile World
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AS

SELLING AGENT

For TEXTILE MILL SUPPLIES and MACHINERY

MORE THAN TWENTY-FIVE YEARS' EXPERIENCE
IN TEXTILE MACHINERY INDUSTRY

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We are a reputable principal
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Your raw material is idle!

A well introduced textile agency with extensive connections among European manufacturers (spinners, weavers, hosiery mfs) is at your disposal to have your raw cotton and rayon tops, cotton and rayon yarns worked on commission basis. Might ensure acceptance of finished goods on favorable conditions.

For particulars apply to

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Charlotte, N. C., complete in few days, brick and concrete, 23,000 sq. ft., no posts. Southern Railway and national highway. Built for 150 women workers. Includes dyehouse. $126,000.

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CHARLOTTE, N. C.

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Open in Australia September 2nd

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Textile Specialists and Stockists very well introduced in the whole Middle East having offices in Syria and the Lebanon, correspondents in Turkey, Iraq and Iran seek representation Woolen, Cotton, Rayon, Nylon piece goods and yarns. Also in the market for factory remnants.

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We have
Spinning capacity for wool yarn— in oil on cone— 1 to 2.1 run

We need
Carded cotton knitting twist on cones 12/1-30/1 natural

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COMMISSION THROWSTER

for high grade cotton yarn
All year round production

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THERMO-DYNAMICS, INC.
Plant Modernization
Industrial Heating, Drying,
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Have substantial position in 30/2 to be woven into upholstery fabrics on wide jacquard looms, on Commission Weaving only.

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Industrial Plants, Foundations and Soil Studies. Mechanical and Electrical Installations, Overhead and Underground Electrical Distribution, Water Works and Sewerage.
Designs, Reports, and Appraisals.
216 W. Market St. Greensboro, N. C.

Wanted Advertising—Pages 328 & 330

Obadiah came near being thrown out the window— but he got what he wanted!

WHEN William Almy and Obadiah Brown got full control of the second Cotton Mill in Warwick, Rhode Island, in 1794, Obadiah and a Mr. John Allen visited Slater's first Mill in Pawtucket to look around and sort of get a few useful hints. When old Sam caught Allen attempting to measure some of the machines, he took hold of him and threatened to heave him out the window. Obadiah, who was a partner of Slater as well, took over the measuring job from Allen, saying: "I will finish thy work, John, and we will see if Samuel will serve me as he did thee." Sam took the hint; Obadiah took the measurements; and the Warwick mill got the machines it needed to become a success.

MLC SERVING THE TEXTILE INDUSTRY MLC

2—±00 Sturtevant Blowers, paddle type, belt d iven
1—62½ C&M Brushing Machine
1—72, 2 cyl. Brushing machines
3—2—16", 1—50" Button Breakers
1—48" Bridesbrug Card Set, 2 Cyl. Wood
1—48" Furbush & Gage Card Set, 3 C.l. Wood
8—Whitin Model C Combers
1—Whitin Model C Ribbon Lapper
1—Whitin Model C Sliver Lapper
1—48" D&F Ceiling Condensers
1—64" Voilker Dewing Machine
1—100 Spindle, ±25 Foster Doubler equipped for wooden Tubes, motor driven with 5 HP. 550V motor
3—48" P&W Doubling, Boarding and Winding Doublers
1—Set 20 H. W. Butterworth 108" Dry Cans, dryer, motor driven, with Reeves Drive
1—72" Schoffield Automatic Duster, no apron, no fan
1—54"x54" Batch Type Waste Duster
2—26" Tolhurst Extractors, belt driven, overhauled
1—30" American Laundry Extractor, copper tinned basket, belt driven, under drive
7—40", 48" & 60" Tolhurst self-balancing copper basket Extractors, top pulley drive
6—40", 42", E&H and C&M Folding Machines, with take-up stand, chain drive, no motor
1—100" C&M Flat Fold Folding Machine, 1 HP GE Ind. motor
6—±7 Hunter 2-String Fulling Mills, belt driven
1—48"x21" Smith & Furbush Garnett with feed apron
1—18"x20" James Smith Garnett
18—40", 48", 54", 60", 70", 80", 90" Card and Napper Grinders, with and without floor stands
2—Peerless Belt Lacing Machines
1—Card Lacing Singer Machine ½ HP GE Ind. Motor
2—15½ C&K 4x1 Looms, 25 harness with 1 HP D.C. motors
1—48 C&K 4x1 Box Loom, 25 harness, motor drive
32—45½" Reed Space Draper Model K and Hopedale Automatic Looms, 20 harness, belt drive
8—54" Reed Space C&K 2x1 Looms, 20 harness, belt drive
29—54" Reed Space C&K 4x1 Looms, 20 harness, belt drive
10—54" Reed Space C&K 4x1 Looms, 25 harness
12—54" Reed Space C&K 1x1 Looms, 20 harness
1—54" Reed Space C&K 1x1 Loom, 25 harness
72—80" and 82" C&K 2x1 Automatic Looms, 8 harness cam motions, motor driven
3—92" C&K 4x4 Box Looms, 25 harness, friction clutch drive
6—92" C&K 4x1 Automatic Looms, 8 harness cam motions with 2600 hook jacquards, motor driven
1—42" C&M Measuring Machine, 60 yd. dial, belt driven
1—54" P&W Measuring and Winding Machine with 100 yd. clock with motor.
1—64" P&W Measuring and Woolen Cloth Winder
1—66"x24" P&W 60 yd. Measuring Machine, sanded roll, belt driven
1—66x24" Measuring Machine with 100 yd. counter and folder, belt driven
2—24 Pole Smith Drum Skein Mercerizers
1—66" Woonsocket Double Napper, each cyl. with 20 rolls
1—72" P&W Single Acting Napper
2—48" C. D. Sargent Burr Pickers
4—80" D&F 20 Roll Single and Double acting Nappers
2—48" Packhurst Burr Pickers with Blower, belt driven
1—42" Olsham Fearnaught Picker with feed table, no feed
7—50", 65½", 66" and 98" Voelker and Gessner Single and Double Rotary Cloth Presses
1—54" Werner Single Color Printing Machine with Reeves drive
2—50 Spindle Carpenter 54" Skein Reels, non-adjustable, belt driven
1—50 Spindle Carpenter 54" Adjustable Skein Reel, belt driven
1—60" C&M Single Blade Shear, plush, arranged for motor drive, no motor
12—66" P&W 2-Blade Shears, Model B, belt driven
1—66" P&W 2-Blade Shears, Model A, belt driven
2—60" P&W File Cut Single Shear
2—66½" P&W Single Blade Shears, belt driven
1—72" Monteforte 3-Blade Shear
4—76" C&M Single and Double Blade Shears
1—42" Singer with hood
1—32" D&F Jack Spooler
1—100 Spindle Draper Spooler with Foster Tension, McCall Guide
1—28" Wide x 12" Diameter Set of Iron Squeeze Rolls
1—40" Butterworth Pin Tenter Frame with 44-62" Opening with Reeves Drive, arranged for motor, no motor
1—60" C&M Single Brush Tiger, arranged for motor drive, no motor
22—156 Spindle S&L Tape Driven Twisters, 3½" R, 5" gauge, belt driven
1—100 Spindle Lowell Trapp
2—1—100 & 1—200 Spindle Fowell Trap Twisters, 3½" ring, 5" gauge, arranged for chain motor drive, no motor
1—Washing Tub Agitator with motor
2—54" Entwistle Warpers
1—80 Spindle Foster Tube Winder
8—100 Spindle Foster Model 12 Tube Winders
1—46" Winding, Boarding and Tubing Machine
2—60" P&W Winders, Edge, Stenciling and Winding
2—Sargent Yarn Conditioning Machines
1—Reduction Gear
1—±15533 Reeves Drive, Size 6, Class G, Range 3 to 1

QUANTITY OF MULE BOBBINS AND VARIOUS SIZE TWISTER BOBBINS AND WOODEN SPOOLS

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street MLC NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

FOR SALE

AUTOMATIC LOOMS

693—Draper Model "E" automatic Looms, 45" reed space—equipped with two-bank stop motion, roller shafts, belt driven. (513 Looms equipped for 20" dia. beam heads—180 equipped for 18" dia. beam heads.) 132 Looms have midget feelers.

311—Draper Model "E" automatic Looms, 40½" reed space—equipped with auxiliary shafts, spring top, two and four bank stop motion, belt-driven—16 and 18" dia. beam heads.

744—Stafford automatic shuttle-change Looms, 41" reed space—equipped with 16 and 20-harness Dobbies, two-bank stop motion, belt driven—16" and 18" dia. beam heads.

176—Stafford automatic bobbin-change Looms, 45" reed space—equipped with two-bank stop motion, belt driven—18" dia. beam heads.

Note: Quantity of new spare parts and supplies available for above Looms.

1—WHITIN 36" BALE BREAKER

1—PLATT VERTICAL OPENER

1—KITSON 38½" AUTOMATIC FEEDER

1—SIZE KETTLE, 210 gallon capacity.

FINISHING EQUIPMENT

1—58" 7-roll GRANGER CALENDER rolls: 5 cotton 18-24", 2 chilled 12"—equipped with 60" brass Mycock Expander.

1—50" 6-roll H. W. BUTTERWORTH CALENDER, rolls: 4 cotton 20", 1 chilled 12", equipped with 48" Spreader, three-bar brass Mycock Expander.

1—56" 3-roll GRANGER CALENDER, rolls: 2 cotton 18", 1 chilled 12"—with barrel expander.

1—43" 3-roll RICE, BARTON & FALES FRICTION CALENDER, rolls: two 12" and 18" chilled, 1 cotton 24".

1—44" SCHREINER HYDRAULIC 2-roll CALENDER complete with Pump and Accumulator.

1—45" 7-roll METHER & PLATT MANGLE, rolls: 2 cotton 22", 1 cotton 18", 1 brass 25", 3 brass 14"—equipped with 3-bar Mycock Expander and 24" x 42" Dry Can.

1—60" TOMMY DODD STARCH BACK FILLER, Birch Brothers make.

1—60" DAMPENER WITH ROOTS NO. 4 BLOWER complete with one 30/1200 variable speed G.E. motor.

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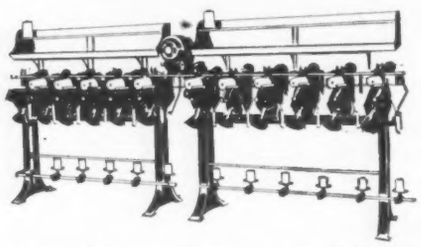

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1—Sargent 36" Burr Picker with automatic feed

1—E. & H. 66" yard folding machine

1—L. & G. 30 sp. Cop Winder

1—Sargent 48" Rotary Feed with squeeze rolls

1—P&W Doubling & Folding & Measuring Machine, 66"

1—44" A. L. M. Co. Knit Goods Calender

1—Hunter Rope Soaper

2—Spencer Automatic Oilers

1—1300 hook Royle Card Repeater & Lacer

20,000 Wood Spools, 4"x6", 4½"x6"

1—Voelker 66" Press with extra cylinder & jackets

1—Gessner 66" "Jumbo" Press

1—L. & G. Chenille Cutter, all New Knives

1—Set (7) Copper Cans 33"x23"

1—6 cylinder Cloth Shear

1—84" D.A. Woonsocket Napper 20 rolls, Motor Drive

4—72" Draper Automatic Looms, motor drive

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#50's and #90's, rebuilt to order.

Specializing in Woolen Yarn Machinery

FRANK W. WHEELER Co.

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Keep Production Going
Keep Prices Down
Keep Men at Work

Get the machine you need—from

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Complete Novelty Yarn Plant.

EXTRACTORS

4—K & G & Burkhardt 60" Extractors, rubber baskets
1—Hercules 48" Extractor, copper basket.
3—26" & 30" Hercules Extractors
1—V.V. 42" self Balancing Extractor with motor.
2—Gessner 72" & 50" Vacuum Extractors.
3—Tolhurst 48" & 36" Open Top Extractors.
1—Tolhurst 60" underslung motor driven Extractor.

DYEING MACHINES

1—Complete Beam Dyeing Unit
2—Smith-Drum 22 & 20 arm skein dyers.
3—K. & W. Obermaier & Buhlmann skein dyers
1—Sargent 3-bowl scouring train, 48" bowls.
3—Yarn scouring & dyeing machines, all stainless steel.
3—6 and 24-string dye kettles.

DRYERS

1—P & S Raw Stock Dryer, automatic feed.
1—P & S 4-unit 8' Multipass Airlay Dryer.
1—National Loop Dryer, 6 fans, 86" wide.
1—Heathcote Pin Tenter Dryer.
2—P & S Hurricane Dryers.
2—3-Apron Conveyor Dryers.
1—Hurricane Wool Dryer
1—Hunter High-Speed Rotary Tenter Dryer.
1—James Hunter Knit Goods Dryer.
5—P & S Raw Stock Dryers.
1—Proctor & Schwartz Conveyor Dryer.

NAPPERS

2—D & F Single Acting Nappers, 60" & 84".
3—Gessner & Woonsocket S. A. Nappers, 84"-90".
2—Woonsocket 86" 20-roll S.A.B.B. Nappers.
1—Woonsocket 86" 24-roll D.A.B.B. Nappers.

TENTER FRAMES

2—Textile Fin. & Butterworth Tenters, top openings, clips, 60' & 90'
1—Heathcote Pin Tenters 30'60" wd.
1—V.V. 40' Tenter, 60", S.S. clips.

PALMERS-PALMER QUETCH UNITS

1—Textile 66" Low type Palmer.
1—V.V. 88" Palmet Quetch Unit.
1—French Palmer, 60", complete with blanket & Drives.
1—General Machine Co. Palmerette.

PADDERS - MANGLES - QUETCHES

1—V.V. 60" 2-roll Dye Padder, rubber rolls.
2—2-roll Padders, 94" & 98".
2—Butterworth 50" Starch Mangles
3—Butterworth & Morrison 2 & 3-roll Quetches 50"-72".

BEAMERS - BATCHERS

5—Textile 50", 60", 66" & 72".
4—2-roll B.B. Batchers, 50"-72".

FLAT FOLDERS—DOUBLERS

2—E & H Flat Folders, 50"-60", with motors.
3—P & W & Windle Doublers, 50"-65".
1—96" Doubler & Folding machine.
3—Plastic & Rubber Coaters, 50"-72".
4—72" Inspection Frames.

WASHERS

2—Riggs & Lombard Continuous Cloth Washers.
3—Empire Washers.
1—American Laundry Cascade Washer.
1—Rodney Hunt Rope Washer.

FULLING MILLS

3—Rodney Hunt #10 Fulling Mills.

CALENDERS

2—Butt, 2-roll Hydraulic Calenders, 30 & 100 tons.
1—Butt, 3-roll Embosser, 72".
1—Grand Rapids Calender, 46½".
1—Butt, 3-roll 55" Calender.
1—Textile Fin. Co. 150" 2-roll Calender.
1—Textile Fin. 2-roll 60" Calender.
1—C. & M. 2-roll 60" Calender.
1—3-roll Ribbon Calender.
1—4-roll 54" Calender.
1—K & G 3-roll 60" Finishing Cal.
1—Butterworth 80" Paper Calender.
1—Farrell 4-roll Calender.

SHEARS

3—P & W 2 Blade Shears 66½".
1—P & W Single Blade Shear 60".

DYE BECKS—DYE JIGGS

3—V. V. 4' stainless steel lined dye becks, complete with motors and drives. New all S.S. Dye Becks, 4'20' long.
4—60" S.S. Dye Jiggs.

complete knitting plant.
complete Hosiery Dye. & Fin. Plant.

PRINT MACHINES

2—R.B. & F. 3-color Print machines, 40".
2—R.B. & F. 5 & 7 color Print machines, 40".
1—Single Color Print Machine, 60".
1—Werner 54" Single Color Print Machine.

TUBERS & MEASURING MACHINES

3—Tubing & Measuring Machines 50"-60".

WEAVING MACHINES

14—C & K 72" looms.
20—C & K heavy duck Looms, 76".
14—Halton Fine Index D. L. Jacquards.
30—C & K 2 x 1 looms, 68".
55—C & K Jacquard Looms, 48".
5—C & K Carpet Looms.
3—C & K Heavy Worsted Looms, 4 x 4, 92".
10—Draper "D" 72" Automatic Looms.

KITTING MACHINES

Lot of Hosiery Knitting Machines.
Lot of Outerwear Knitting Machines.
Lot of Wildman, S & W, & H & Leighton machines.
5—Latch Needle machines, 20", 30" & 35" cylinders.
4—Dubied & C & F machines.
Lot of Cooper Spring Needle machines.

PREPARATORY MACHINES

1—40" Fearnaught Picker.
1—Woonsocket Single Beater Breaker Picker.
4—Shoddy or Rag Pickers.
1—Whitin 40" Finisher Picker.
30—56" Fisher automatic Feeds.
3—C & M 40" & 42" Fearnaught Pickers.
1—Process Opening & Cleaning Unit.

CARDING MACHINES

1—D & F 2-cylinder 48"x60" Card with Bramwell Feed.
2—Sets 3-cyl. D & F 48" x 48" All Iron Cards.
1—D & F 60" Card Breaker.
2—Kitson & Bates automatic Hopper Feeders.
1—Bramwell 72" Feed.

SPINNING & WINDING MACHINES

11—Davis & Furber Mules 2¼" gauge.
40—Whitin Spinners, 204 spindles, 4" gauge.
1—Davis & Furber Compressor Spooler.
12—#90 Universal Winders, for silk operations.
1—Sipp 80 spindle Winder.
4—Eastwood Skein Winders, 44" to 60" skeins
4—Payne & Huse Winders.
3—Sipp Eastwood Skein to spool Winders, 100-200 sp.
4—Collins Novelty Twisters.

BUTTON BREAKERS

2—V.V. 60" & 50" Button Breakers.

BRAIDING MACHINES

—Lot of New England Butt Braiders.

TWISTERS

5—Brownell Twisters, 48 to 96 spindles.
9—Whitin Twisters, 200 spindles, tape drive.
1—D & F 60 spindle Twister, 3¾" gau.
30—F & J Twisters, tape driven, 4½" ring.

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SINGLE ITEMS TO COMPLETE PLANTS

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15 PARK ROW • NEW YORK CITY 7 • N. Y.

FOR QUALITY TEXTILE EQUIPMENT

Wm. Rabinowitz & Sons

214-222 HAMILTON STREET · ALLENTOWN, PA.

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ALL ITEMS LISTED SUBJECT TO PRIOR SALE

HARD TO GET LOOMS

10—Schaum & Uhlinger Narrow Fabric Looms - 15'-8" - 1½ H.P. Motor Driven, Cam Motion, 16 Space Batten.

30—C & K 52", 2x1, 25 Dobby, ¾ H.P. Motor Drive. 1923 Model.

20—C & K 52", 4x1, 30 Dobby, ¾ H.P. Motor Drive. 1923 Model.

SILK AND RAYON WINDERS

3—ATWOOD DOUBLE DECK WINDERS.....140 SPINDLES EACH
3—SIPP DOUBLE DECK WINDERS.....120 SPINDLES EACH
4—EASTWOOD DOUBLE DECK WINDERS.....256 SPINDLES EACH
1—EASTWOOD SINGLE DECK WINDERS..... 60 SPINDLES

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BAKELITE TUBES 3½" Long—1⅛" Diameter.
Approx. 50% of Them Perforated
1600 SELF STACKING METAL TUBE RACKS
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New & Guaranteed Rebuilts
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WILDMAN 28 CUT SPRING NEEDLE MACHINES

NUMBER OF FEEDS	CYLINDER SIZE
6	11"
8	12"
8	13"
8	14"
10	15"
10	16"
10	17"
12	18"

FS-818 Textile World
330 West 42 St., New York 18, N. Y.

6—2 Cylinder Sets 48" x 48" Iron Cards, Camelback Intermediate feeds, Bramwell Automatic Feeds, Barker Rub Motions.
1—D & F. 48" wide x 60" dia. iron card with 20" breast, 20" doffers, D. & F. rub motion, bramwell Automatic feed.
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2—80 Sp. Foster Tube Winders.
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1—Butterworth 2 Bowl Calender, hydraulic 75 tons pressure, 45" face of rolls; gas heated steel roll, motor drive, no motor.
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1—P. & W. Two Cylinder Teasel Gig, 67" face. Rebuilt.
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1—Gessner Rotary Steam Cloth Press, 66".
100 M.—9" Automatic Loom Bobbins.
100 M—8" Mule Bobbins.
20—Prince Smith & Sons 168 Sp. Cap Trap Twisters, 3¾" Guage.
50—C. & K. Lays Complete with 4 x 1 Boxes attached for 82" automatic looms, 8¾" or 9" bobbins.
1—James Hunter Sample Fulling Mill.
1—Curtis & Marble Shoddy Picker, 27" face of cylinder, Ball Bearing.
1—6 Drum Spooler for 6" Traverse.
1—Single Cylinder 30" x 42" Shredder.
1—48" Copper Basket Extractor, Motor Driven 220 v. 60 cy., 3 ph.
1—42" Copper Basket Extractor, Motor Driven 220 v. 60 cy., 3 ph.
1—Prince Smith & Son 100 Sp. Woolen Twister, 4½" Ring, Trap Twister; Band Drive.
1—3 Bowl Calender, 60" face, heated center bowl; lever system tension.
2—Textile Finishing Co. 15' Tenter Frames, 72" Maximum.
1—Textile Finishing Co. 2 Bowl Calender, 70".

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48" Barker Rub-apron Condenser
67" D & F Teasel Gig
8-string R/H Cloth Washer

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50,000 Bakelite 5B spinner steaming spools. 5⅛" trav., 2¾" heads with ferrule, 1¼" barrel. Sample and price will be given upon requst. Offered subject to prior sale.

1,000 fibre head warp rolls like new. 9½" trav., 6" fibre heads, 2" maple rock barrel, 11/16 bore.

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High speed, separate beam drive. Excellent condition. 8 yd. head.

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COMPLETE COTTON SPINNING UNIT

10,000 Spindles *Spins 10 to 24s*

MAY BE INSPECTED IN OPERATION

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24—S-3 Silk Looms 54" between swords 20 Harness ¾ HP Motor Electric Stop Motion

42—C&K Looms 45½" Reed Space 20 Harness ½ HP Motor Mechanical Stop Motion

FINISHING EQUIPMENT

1—Butterworth 50" *Dye Jigg*, Stainless Steel, with motor.

1—Van Vlaanderen 54" *Quetsch*, 2 Roll, Ball Bearing.

1—Van Vlaanderen 5 tier 4 section *Conveyor Dryer*, 60" Face, motor driven fans, airfin heating units.

1—Proctor & Schwartz *Loop Dryer* 30' length, sticks 7' 1", 4 overhead fans.

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2—Elliot & Hall *Flat Folders*.

1—56" *Examining & Measuring* Machine.

1—Butterworth 90' *Tenter Frame*, 50", 15 HP motor, steam coils and brass clips.

2—Windsor & Jerauld 40' *Tenter Frames*.

2—80" *Steaming Machines*, equipped with pleating device.

4—80" Double Teasel *Gigs*, with 7½ HP motor.

1—Set Horizontal *Dry Cans*, 23 Copper Cans to set, 105" wide.

1—Set Vertical *Dry Cans*, 40 Copper Cans to set, 105" wide.

KNITTING MACHINES

30—Circular Rib Knitting Machines, 10" to 16", 8 Feed, 10 & 11 Cut.

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2—Foster #30 Winders 100 spindles each.

8—Universal #50 Winders 6 spindles each.

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1—Entwistle High Speed Warper, with magazine creel, 2 HP Motor.

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BEAMER, 60" Van Vlaanderen
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BLOWER, New, Squirrel cage type
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CALENDAR, 3 roll 70" face
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DECATER, Gessner, Full 72"
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DRY CANS, set of 16, 80"x23"
DRYER, P & S Airlay
DRYER, Single & Double Truck
DRYERS, Kenyon & Heathcote, 6 tier
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DYE TUBS, 6' wood, complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINE, Smith Drum Pocket type
DYEING MACHINE, Smith Drum 60 Arm
DYEING MACHINE, Rochester Rotary 30"x20", 3 socket, 20 lb. capacity
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EXTRACTORS, Open top Tolhurst 40"
EXTRACTOR, Open top 30" American
FANS, Exhaust 3 blade propeller 30", 36", 48"
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HOISTS, Budgit, 1 ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, monel lined 60" st. st. 50" & 60"
LOOMS, Draper Model E 30", 40", 55"
LOOMS, C & K Heavy Duck Looms 76"
MEASURING MACHINE, P&W Model AWC
MOTORS, ¾ to 5 HP, AC/DC 220 volt
PAD, 3 roll Hydraulic
PAD, 2 roll 50"
PALMER 62"
PALMERETTE, 60" face, General Machine
PRINT MACHINE 10" sample or ribbon
PUMPS, Nash Hytor #H5
QUETCH, 2 roll VV 50" & 60" ball bearings
REEVES DRIVE, Ball Bearing #0
SCUTCHER, 50"
SEWING MACHINE, Arlington Bicycle
SHEAR, Hermas, 4 Knife 70" wide
SHELLS, Wooden, 48"—44"—42"
SQUEEZE ROLLS, 12"x10"
STEAMER, Cottage, 12' long x 66" wide
TENTER FRAME, Pin W & J, 30'x220" wide
TUBERS, Paterson variable speed motors
TUBER, VV with doubling attachment
WARP COMPRESSOR CREEL
WASHER, open 4 compartment, 60" wide
WASHERS, Slop. New Stainless steel
WASHER, GL Rope type steel & wood
WASHER, 3 compartment open
WOOL WASHERS, J. Hunter 6'.
WATER SOFTENERS & FILTERS

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175—Wardwell 16 carrier high speed braiders

40—Triple decker textile make wire braiders

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Various other equipment

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6 Atwood double deck upstroke twisters, 1½ lb. capacity, Model 3S, 192 spindles per machine. 7" spindle spacing, 8" spindle length, large Bakelite separators. 5¼" traverse, 5⅛" leather covered take up rolls driven by chain drive. Machines—belt driven. Now in production, release soon. Also approximately 4,000 fibre head take up shafts used on these twisters. 5¼" traverse. 4⅜" heads. 2¾" barrel.

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250,000 3 ring automatic bobbins. 7⅜"
25,000 3 ring automatic bobbins. 8¾"
20,000 7" wood quills with metal spray

30 plain loom beams. 60" between heads. 10" heads.

5230 fibre head spools. 3½" traverse, 3½" heads, 1½" barrel
17,000 fibre head spools. 3¾" traverse, 2¾" heads, 1⅛" barrel
20,000 fibre head spools 3⅜" traverse, 2⅛" heads, 1¼" barrel
60,000 all wood spools, 2¼" traverse, 1⅜" heads, ⅜" barrel
5000 fibre head spools, 3⅜" traverse, 3¼" heads, 1½" barrel
2500 fibre head spools. 3¾" traverse, 3" heads, 1¾" barrel
10,000 fibre head spools. 3⅞" traverse, 2½" heads, 1¼" barrel
6,000 stainless steel take up shafts. 3¼" traverse, 2¾" head. Fixed pin.

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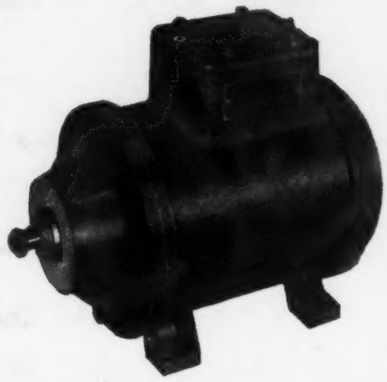

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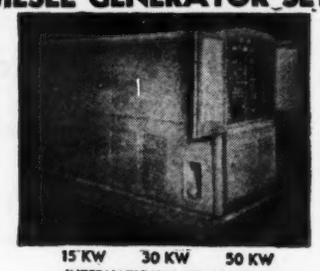

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2—NET DRYERS
2—QUETCHES (Motor Driven)
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Repeaters, Lacers Card Cutters Jacquards of all description, also Plush Jacquards

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225—Draper Automatic Looms for 40" goods, Roper let-off and ratchet take-up, Belt Drive.

40—Crompton and Knowles Automatic looms 4 x 1 with 20 harness dobbies to weave 40" goods

8—Ribbon looms with dobbies. 15'6" with double set of battens, one set for making Boucle fringe, the other set of battens for regular ribbon work

80—Draper Automatic Looms for 60" goods, equipped with Roper let-off and ratchet take-ups, Belt Drive

50—Draper Automatic Looms for 48" goods, Roper let-off and worm take-up, Belt Drive

10—Crompton and Knowles 4 x 4 48" Jacquard Looms, individually motor driven

20—Crompton and Knowles 2 x 2 48" Jacquard Looms, individually motor driven

70—Crompton and Knowles 600 hook double lift Jacquard machines

52—Crompton and Knowles motor driven Looms 4 x 1, equipped with dobbies, warp stop motion, pick clocks, temples, beams, etc., 51½" Reedspace

74—2 x 1 same as above all for 48" cloth space

50—#90 Universal quillers or coppers, with or without bunch builders belt driven or motor driven

Sipp or Atwood winders to wind from skein to spool

Sipp or Eastwood warpers and creels

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Numerous lots of spools, various sizes—all wood, wood and metal, and fibre and wood etc.—of different size head and traverse

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2 WHITIN QUILLING MACHINES

304 Spindle—3⅛" Gauge 10½" Traverse—Model "J"

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Large Heavy Type 3 Roll Machine—But No Embossing Rolls Included—Takes 60" Goods

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29 Tinned Steel Cans 144" Face x 24" Dia. Butterworth—3 Section Vertical

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Standard Size—80" Between Heads—30" Maximum Dia.

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Will Take Cloth Up To 90" Complete with Folder & Sewing Machine & Motor.

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85½" High—108" Long—7" Spindle—Centers for 220 Ends—3¼" Spindle—Centers for 440 Ends—Takes Paper Tubes

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72"

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Includes Pumps & Foxboro Temp. Clock—Also Roll Up Machine—72"

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Taylor-Wadsworth—12 Cylinder

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2 WORSTED 48" LISTER-NIP COMBS

Ramsden & Stephenson—For Fine Wool—With Feed Boxes of 26 Fallers per Set

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Parks & Woolson—#5599—Width 66"

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Model "C"—Serial 425000—Series—40" Width

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McBride—300 Ends—Suitable for 4" x 8" Roving Bobbins—Equipped with Brake & Elec. Drop Motion

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Or Compressor made by Worcester Warp Compressing Machine Co.—48" wide with Jack Spool Stand—5 digit Veeder Root yardage counter—new lot of Jack Spools with 12" Heads

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66" Wide

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Rubber and brass rolls from 30" to 112" long in all diameters.
Sturtevant blowers #6 and #8.
Motors all sizes.
Dye jigs 50" to 72".
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3—4' Diameter x 46" face copper cans heavy gauge.
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MOTORS—2, 3, 5, 7½, 10 HP 220 Volts, 3 phase 60 cycles

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1—#1 Class D 1—#2 Class D 1—#3 Class E 1—#5 Class A

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Sizes 1½-3-4 5 Window Fans 36" and 38"

1—KW 14 stick Skein Dye Machine monel lined, with 1 HP 220 volt motor & gear reduction unit.
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All in Excellent condition

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3'9" Cincinnati-Bickford Radial Drill
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2 H Milwaukee plain horiz. Miller
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20"x8' Lodge & Shipley 8 H Lathe T. A.
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THREE (3) 300 LB. PACKAGE DYEING MACHINES

With stainless steel carriers, in excellent condition.

One available immediately; One available October, and One available December.

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1—BATCHER & RAILWAY SEWING Machine 60" Adjustable, mtr. drive.
2—BATCHERS 50" and 54" Single and Double roll units.
1—BRUSH 68" with steam box.
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2—CALENDERS Embossing 54" Face 2 roll units.
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1—Set DRY CANS 101" Face x 23" Dia., Copper 21 cans.
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1—DYEING Machine 25 porcelain arms equipped with pump.
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1—SLASHER 64" Rayon 3 can with controls & size box.
1—SLITTER 42" roll to roll 87 Knives.
1—TUBER 48" with clock, motor driven, tube to tube.
1—TENTER FRAME, Pin Style, 33' x 66"
2—BACKWASHERS with Gilling and Dryers.
3—WASHERS Rope Type 6' Boxes with Log Rolls.

SPECIAL!
WOOL CARDING & SPINNING

1—C&M 40" Fearnaught Picker.
3—Sets 4-Cylinder Woolen Cards 48x48 Ring Rubb Condensers.
2—J&B 360 Spindle Mules 2¼" Gauge 8¾" Bobbins.
1—D&F 420 Spindle Mule 2¼" Gauge.
1—Set 3-Cylinder Card 60"x48" Ring Rubb Condenser.
1—300 Spindle D&F Mule 2¼" Gauge.
1—60" Whitin Model C Tape Condenser.
1—3-Cylinder Woolen Card 60"x48" Tape Condensers.
1—Foster No. 35 Cone Winder 9" Traverse.

CARDING, SPINNING & WEAVING

4—SPENCER VACUUM CLEANERS Mill type motor driven.
1—BREAST 48" with workers, stripper, etc., clothed.
10—CARD STRIPPERS 49" for Whitin Cards.
1—CARD 45" Face x 48" Dia., Single Cylinder with Condenser.
1—CARD 40" Face x 48" Dia., Double Cylinder with Lapper.
2—CARDS 54" x 54" Worsted with Coilers.
2—COMBS Worsted Single Dabbers 48's & 50's Yarn with coilers.
2—CONDITIONERS, Sargent for yarn.
3—CUTTERS, Flock and Rag type.
2—DOUBLERS YARN Foster #25, 100 spindles each, mtr. driven.
14—DRAWING FRAMES 4 & 6 Delivery Frames 10" & 12" Coilers.
4—FEEDS 52" weighting type as for Cards.
2—FEEDS 48" and 60" as used on Pickers.
2—FEEDS 60" Apperly intermediate as used on Cards.
1—GARNETT 60" x 30" dia., Hopper Feed, Breast, unit clothed.
4—GILL BOXES Baller Type Single Head, Double delivery.
1—GRINDER NAPPER 72".
4—INTERMEDIATES 9x4½. 72 and 126 spindle units.
14—JACQUARDS 1304 Hook Mach's fine index.
3—JACKSPOOLERS 40" and 48" units 48 and 60 ends.
4—LAPPERS 20 end silver feeds, 10½" Lap.
10—LOOMS Draper E 40" 2 harness, belt dr.
3—LOOMS Draper D 40" 8 harness, motor dr.
32—LOOMS C&K 4x1 automatic 54" Reed Space, 20 harness dobby.
12—LOOMS Stafford 60" Reed Space 4 harness, motor driven.
10—LOOMS C&K 82" 4x2 Convertible, E.W.S.M., 30 harness.
2—LOOMS C&K 82" 4x1 Automatic, 25 harness, E.W.S.M.
2—LOOMS C&K 82" 4x4 Box 24 Harness.
8—LOOMS C&K 72" 4x4 Box 16 harness Gem Heads.
4—LOOMS C&K 82" 4x4 Box 12 harness Gem Heads.
2—LUMPERS 36" and 52" Width units.
2—MULES Worsted 650 Spindles each approx. 1-7/10" Gauge.
1—VERTICAL OPENER, Grids, fan and cond.
1—VERTICAL OPENER, screen section & hopper feeder.
1—PICKER RAG 26" x 26" with feed apron.
2—PICKER RAG 42" x 36" dia., cylinders, with lumpers.
2—PICKERS BURR 24" and 40" Widths with Hopper feeds.
5—QUILLERS 378 ends each, 2½" Gauge 8" traverse.
3—REELERS, Skein 54", 80 spindle double side units.
4—SLUBBERS 11 x 5½ balanced rails 56 and 64 spindle units.
12—SPEEDERS 7 x 3½, 176 spindles each.
8—SPEEDERS 8x4, 8x3½, 160 spindles each.
2—SPINNERS 100 Spindles each, Single Deck 3" Comb rolls.
6—SPINNING FRAMES 2½, 3¼" Gauge, 2" Ring, 256 spindles units.
2—STRIPPERS with tanks.
10—TWISTERS 156 Spindles each 3½" Ring, 5" Gauge, tape drive.
1—TWISTER 120 Spindles 2½" Ring, 3-¾" Gauge, band driven.
1—TWISTER 200 Spindles 2½" Ring, 3½" Gauge, band driven.
4—TWISTERS Brownell 72 spindles each, 4x8 Spool.
1—WARPER Ball type 2560 ends, electric stop motion and measuring device.
5—WINDERS Cone Type 60 and 100 Spindle units.

McDOWELL ASSOCIATES, Inc.
2568 Park Avenue Bronx 51, New York
Tel.: MElrose 5-1772

USED TEXTILE MACHINERY

AND

MILL SUPPLIES

Representing Comer Machinery Co. exclusively throughout
Central and South America, Cuba, Costa Rica and Jamaica

NEW ORLEANS MACHINERY CO.

CABLE ADDRESS "NOMACO"

The services of our Engineers available at all times

642 AUDUBON BUILDING — NEW ORLEANS 16, LA. U.S.A.

FOR SALE

(2) TRICOT WARP MILLS

168" wide

ACME SUMMIT MILLS, INC.
Closter, N. J.

FOR SALE:

Dubied and C & F hand machines

14 and 16" BEDS.

Write to FS-566, Textile World
330 West 42nd St., New York 18, N. Y.

Large Machinery Exporter

Requires All Kinds of Textile Machinery

For Cotton, Wool, Worsted, Silk and Rayon

Manufacture

"From Raw Material to Finished Product"

Pickers - Cards - Spinners - Mules - Twisters - Drawing Frames - Preparatory Machines - Looms - Warpers Winders - Dyeing Machines for Yarn and Cloth Calenders - Padders - Mangles - Quetches - Slashers Nappers - Singers - Dryers - Carbonizing Machines Combs - Washers - Tenter Frames - Etc., Etc., Etc.

Highest Prices Paid for Quality Equipment

Send List of Surplus Machines for Prompt Action

W-840, Textile World
330 W. 42nd St., New York 18, N. Y.

No. of Units	Machinery & Description	Manufacturer
8	Bramwell Feeders—39"	Whitin—1927
2	Sliver Lappers—Electric stop motions, metallic rolls, 9¾" lap	Whitin—1910
2	Ribbon Lappers—Mechanical stop motion, leather top rolls, 1⅛" dia. front rolls	Whitin—1910
22	Combers, Model D, 8 leads, 12" coilers, leather drawbox rolls, hank clocks, Aspirators, electric top motions	Whitin—1912/15
8	Combers—Model C	Whitin—1908/10
1	Comber—Naismith	
1	Slubber—72 spindle, 11 x 5½, 1¼" front roll (bobbins)	Lowell—1904
4	Fly Frames, 108 spindle, 7 x 3½", 5¼" gauge, 1⅛" dia. Front roll	Lowell—1904
4	Fine Frames, 176 spindle, 7 x 3, 1⅛" dia. Front roll	Saco-Pettee—1910
3	Cameless Tube Winders—16 spindle	Saco-Lowell—1917
8	Bottle Bobbin Winders—40 spindle	
3	Single Jackspoolers—48 end—40"	
2	Multiple Jackspoolers—6 drum 48 end—40"	
100	New Jackspools	
1	Skein Reeler—44 end, 54" reel, belt drive	N. T. Carpenter
1	Bobbin Stripper	Airway Lawrence, Mass.
5	Dolly Twisters—272 spindle, 2½" ring, 3½" gauge, filling wind, tape cylinder drive, belt drive	Lowell—1904

AMOSKEAG-LAWRENCE MILLS, INC.
Manchester, New Hampshire

DRY BOX—VAN VLAANDEREN SILK NET DRYER

52' long 7'7" wide. Operates at 275°

FS-809, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

WINDERS

8 Universal Winders No. 50. 6 spindles to each machine. Belt drive. All Winders motorized. One motor to two machines.
All machines in excellent operating condition

FS-820, Textile World
330 West 42nd St., New York 18, N. Y.

New "SEARCHLIGHT" Advertisements

received by October 9th will appear in the October issue, subject to space limitations.

Classified Advertising Division

TEXTILE WORLD
330 West 42nd St., New York 18, N. Y.

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CRESCENT has to be better to merit Leadership!

GIVE BETTER SERVICE—HAVE BETTER EXPERIENCE—
—DELIVER BETTER VALUE TO CUSTOMERS—ALWAYS!—

OPENING AND PICKING

1—Whitin Intermediate Picker
8—H & B Breaker Pickers, 3 Blade Beaters, 1920
1—Whitin Bale Breaker, 45", 1920 Model
6—Vertical Openers. Saco-Lowell, H & B, Woonsocket
3—Whitin Downstroke Cleaners, Ball Bearing, 1927 Model
3—Lummus 3-Gate Gyrators

CARDS

2—Sets James Smith Woolen Cards, 2 cylinders, 60x60, wooden cylinders, Ring Doffers.
1—Dobson & Barlow 45" Waste Card, flat top, with Breast.

DRAWING AND ROVING

96—Deliveries H & B Drawing, 10" Coilers
12—11 x 5½ Slubbers, Whitin, Woonsocket, H & B
6—10 x 5 Intermediates, Saco-Pettee
4—H & B 9 x 4½ Intermediates
20—Woonsocket 8 x 4 Speeders

WINDERS

44—Universal #90 Winders, disc quill tensions, bunch builders, Belt Driven
8—Foster #12 Winders, Semi-Hi Speed, 100 Spindles each
10—Universal #50 Cone and Tube Winders
4—#25 Foster Doublers, multiple wind, motor driven
1—Foster #56B Doubler, 1930 model, motor driven, 40 spindles

LOOMS

300—Draper Model X Looms 44-½" Reed space, Lacey and Roller Tops, Motor Driven
48—Draper Model HC, 76-½" Reed Space, Knowles Worsted Heads, Motor Driven
254—Draper Model K Looms, 44" Reed Space, Stafford Thread Cutters, 25 Harness Dobbies, Motor Driven
60—Draper Model K Looms, 40" Cloth, Stafford Thread Cutters, operating from C&K 600 hook Jacquard Heads
67—Draper Modified D Looms, 65" Reed Space, Roller and Dwight Tops, Belt Driven
100—C&K 52-½" Reed Space, 20 Harness Double Index Dobbies, non-automatic
38—Stafford, 100" Reed Space, Automatic Shuttle Change, Motor Driven
24—Draper Model P Looms, 49" Reed Space, Roper Let-Off, Belt Driven
96—Draper Model K Looms, 48" Reed Space, 25 Harness Dobbies, Motor Driven
32—Draper Model D Looms, 48" Reed Space, 25 Harness Dobbies, Motor Driven

The first thing visitors to the Crescent building in Fall River always say is: "I didn't realize you were so BIG!"

Now that's a mighty nice compliment, covering our immense building, our long, wide floors crowded with equipment, our fleet of red-and-gold motor trucks, etc.

But we like it better when folks realize we are BIG in our DEALINGS — no matter how small the transaction! We are big enough to make good instantly if, in any way, you as a buyer are unsatisfied. Frankly, we CAN'T AFFORD to have any textile man anywhere say that he didn't get top-notch service and value from CRESCENT! That's just one basic reason for CRESCENT LEADERSHIP.

86—Draper Modified D Looms, 49" Reed Space, 42 with Dobbies, 44 Cam Looms with Dwight Tops, Belt Driven
16—Crompton & Knowles 4x1 Box Automatic Looms, 48" between swords, 4 Harness Cams, Motor Driven
40—Stafford Automatic Looms, 68" Reed Space, Roller Top.

THIS IS ONLY A SMALL PART OF LOOMS AVAILABLE—

WRITE OR PHONE US YOUR NEEDS

TWISTERS

6—Collins Tape Drive Twisters, 4½" Gauge, 3" Rings, 152 Spindles, 1921 Model
1—Brownell Fly Twister, 96 Spindles
4—Saco-Lowell Jack Twisters, 3" Gauge, 1⅝" Rings, Tape Drive using 50" Jack Spools, 18 Ends per Spool, Motor Driven. 1924-1928 Models.

FINISHING

7—Color Kettles, copper, steam jacketed, Tilting Type, with agitators, 100, 150, 200, 250 gallon capacity.
1—Set Butterworth New Stainless Steel Cans, 17 Cans, 23" Diameter, 45" Face, Vertical Frames, Roller Bearing, Siphons, Traps.
300—Copper Dry Cans, 50" Face, 23" Diameters, Vertical Frames, Removable Journals, Siphon and Bucket
1—Set 40 New Butterworth Stainless Steel Cans, 23" Diameter 130" Face, Vertical Frames, Roller Bearing, Individual Traps, Siphons, etc.
1—Set 36 Copper Horizontal Dry Cans, 30" Diameter, 86" Face.
2—Sets Copper Cans, 28" Diameter x 72" Face, Total 15 Cans
1—46" Granger 3 Roll Friction Calender
1—Butterworth 5 Bowl Calender
1—Butterworth ¼" Ton Experimental Laboratory Type Steel Kier, Complete with Pump, Motor Driven.

DYE JIGGS, MANGLES, CALENDERS, HOOKERS, LARGE ASSORTMENT OF ROLLS, ALL SIZES, INSPECTING MACHINES, TOGGLES JOINT CLOTH BALING PRESSES

We Also Have Available—

BLOWERS, MOTORS, SWITCHES, PULLEYS, HANGERS, MACHINE SHOP EQUIPMENT, GENERAL MILL SUPPLIES

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CRESCENT CORPORATION

SALES PURCHASE

LEADERSHIP THROUGH EXPERIENCE AND SPECIALIZED SERVICE

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Telephone Cortlandt 7-1562

PHONE 7-9423

SOUTHERN SERVICE CENTER:
SPARTANBURG, S. C.
Telephone 3600

WANTED

(Additional Wanted Ads on page 328)

WE WANT TO BUY
ANY TYPE—ANY QUANTITY

Singer, Union Special, Merrow, Overlock Sewing Machines. We need them desperately. We will pay . . .

SKY HIGH PRICES!

WRITE — WIRE — PHONE

HEIMLICH BROS., Inc. 136 W. 25th St. N. Y. 1, N. Y.

Established 1883 **WATKINS — 9-4415** *Cable "Heimbro"*

TOP PRICES PAID!

FOR

- D. DECK TWISTERS
- S. DECK TWISTERS
- 5-B TWISTERS
- UNIVERSAL, FOSTER } CONERS
- RAYON, SILK } WINDERS
- REELS
- YARN COND. BOXES
- FIBRE, BAKELITE OR WOOD SPOOLS, QUILLS AND BOBBINS
- LOOMS
- #90 UNIVERSALS
- JOB LOTS OF YARN

WM. RABINOWITZ & SONS

Textile Machinery, Bobbins and Suppiles

214-222 Hamilton Street
Allentown, Penna.
PHONE 3-7497

PHONE — WRITE — WIRE

YARNS WANTED

Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-474, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

DUBIED, SEIFERT & DONNER and GROSSER WIDENING MACHINES

6, 7 and 8 gauge.

Write to

W-730, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Surplus

Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes

W-270, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

#45 Universal winder single spindle machines suitable for winding twine and cordage on large tubes 10" Traverse and 12" Diameter.

Write

P. O. Box 493, Pawtucket, Rhode Island

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

WANTED—2 SETS

Woolen Cards

three cylinders, with feed and tape condensers, size from 48x48 to 60x60.
Also spinning equipment, either frame or mule.

W-804, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

2—2 Spindle Gill Boxes 14 x 9
2—14 x 9—Drawing Frames (For Weigh Box)
2—14 x 8—Finishers 6-8 Spindle Boxes
4—8 x 4 Roving Frames

Will Buy Part of Above Machinery or All
Willing to pay Good Prices

Talny Spinning Co.
1398 Adams Av., Philadelphia 24, Pa.

WANTED

12 PLUSH LOOMS

W-694, Textile World
330 West 42nd St., New York 18, N. Y.

NEED MOTOR GENERATOR SET

Synchronous Motor 300 H.P. or more, AC, 220 V., 50 Cycles, 3 Phase, 1000 RPM Preferred—and Generator, 300 H.P., DC, 230 V., 1000 RPM. Will Buy the Set, or either Item separately.

W-803, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED TO BUY

Monel Metal or Stainless steel piece DYE KETTLE for woolen goods.

W-817, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Multi Color Textile Printing Machines

W-805, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

RASCHEL MACHINES

ONE OR MORE — NEW OR USED ANY MAKE

W-816, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

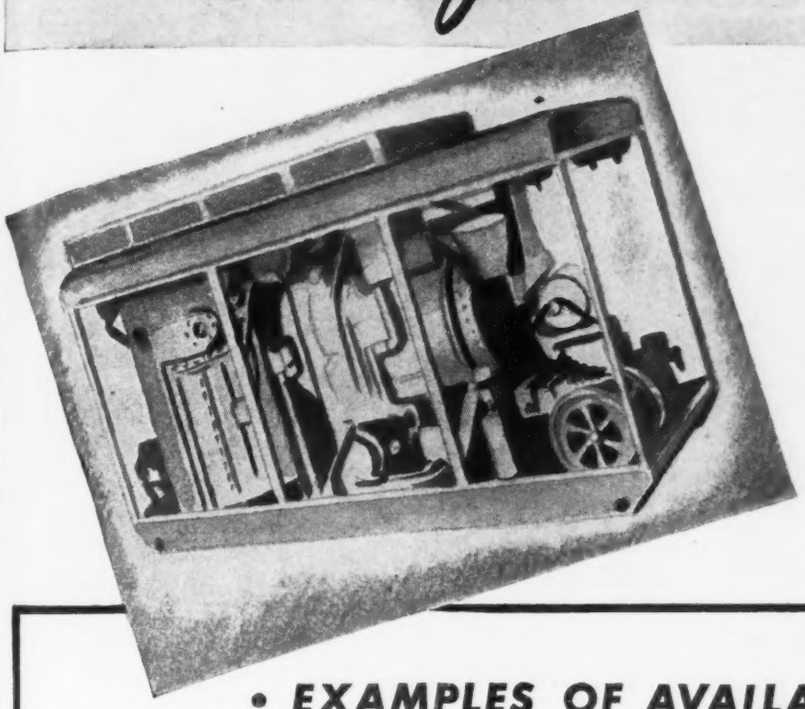
HAND LOOMS

4 shaft up to 60" wide.

Kindly write to—

MRS. D. KISS
176 Huguenot Ave. Englewood, N. J.

Water Purification EQUIPMENT



Small communities, plants, resort hotels, owners of private water systems and others who have been forced by war conditions to delay purchase of water purifying equipment may now get the needed units in a hurry and at low cost. Nearly $1,500,000 worth of this equipment has been declared surplus and is ready for delivery. This equipment, most of it unused, was built to rigid government specifications for use in Army and Navy installations all over the world. The units and accessories are suitable for installations which would normally call for expenditures from $1000 to $70,000—but in this instance the cost of the equipment will average considerably under normal expenditures. Crating to be done by purchaser. To purchase this equipment, simply call your nearest W.A.A. Regional Office.

• EXAMPLES OF AVAILABLE TYPES •

CHLORINATOR, Ser. No. L6938 w/accessories, Wallace & Tiernan Model type MXV-M, Rated capacity 0.6 lb. to 25 lb. per 24 hour, operating pressure 25 lb. to 250 lb. per hour. Floor base mounting. Estimated water treatment output 4,000,000 gallons.

CHLORINATOR, gauge and indicator stand, Serial No. J-1034. Attachments—hose with stopcock. Mfd. by Wallace & Tiernan. Present location Charleston POE, Charleston, S. C.

Everson Semi-Automatic Manual control vacuum solution feed type SterElator, Series 2900-4A, Type "S", equipped with a Naparion Orifice Motor having a 10 to 1 ratio, with metering capacity range of 1 lb. to 10 lb. of Chlorine Gas per 24 hrs., stationary. Equipment—185′ of chlorine solution hose, hard rubber nipple at end, and ⅛″ steel welded twist link chain, also 10′ of drain hose and 15′ of vent hose, with necessary spare parts for meter, gas regulator and valves; auxiliary tank valve, chlorine pressure gauge; set tools; one solenoid-operated water valve. One Howe No. 130 platform scale, 500# capacity; and one Taylor Enslow slide Comparator for determining chlorine residual. Mfd. by the Everson Mfg. Co., Chicago, Illinois.

HYPOCHLORINATOR, electrically operated, injector type, complete. Serial No. L-7162, including 1 Wallace & Tiernan comparator with prism, 1 chlorine disc and 100 CC bottle Ortho Tolidine solution and 1 30 gal. crock.

CHLORINATOR, vacuum type, dry feed manual control, 15 gal. reservoir, model B-15 No. 108 stationary, floor space required, 6 sq. ft., The McKay Co. With attached motor elec., belt driven, ¼ HP 115, w., 38 amp 1725 RPM, G.E. Model 5 Kc, L7AB4909.

CHLORINATOR, Manual control, solution feed vacuum type, 40 lbs., 24 hrs., Wallace & Tiernan Mfg., Model type MSVM, Ser. No. K-1911, Complete, less scales. Wt. 400 lbs. Div. Equipment No. LA 100,342.

ALL ITEMS SUBJECT TO PRIOR SALE

All machines are sold under existing priority regulations. VETERANS OF WORLD WAR II are invited to be certified at the War Assets Administration Certifying Office serving their Area, and then to purchase the equipment offered herein.

EXPORTERS: Most surplus property is available to the export market. Merchandise in short supply is withheld from export and if such items appear in this advertisement they will be so identified by an asterisk.

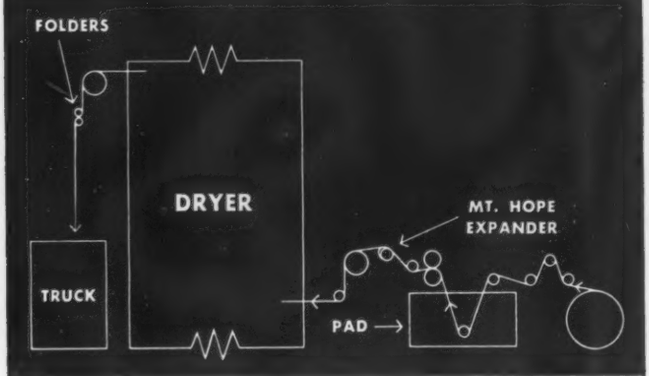
WAR ASSETS ADMINISTRATION

Offices located at: Atlanta · Birmingham · Boston · Charlotte · Chicago · Cincinnati · Cleveland · Dallas · Denver · Detroit · Fort Worth · Helena · Houston · Jacksonville · Kansas City, Mo. · Little Rock · Los Angeles · Louisville · Minneapolis · Nashville · New Orleans · New York · Oklahoma City · Omaha · Philadelphia · Portland, Ore. · Richmond · St. Louis · Salt Lake City · San Antonio · San Francisco · Seattle · Spokane

GOVERNMENT OWNED SURPLUS

650

Mount Hope Free-Wheeling EXPANDER



AS USED TO MAINTAIN WIDTH OF SPUN RAYONS

The diagram herewith shows how a leading finishing plant uses the Mount Hope Free-Wheeling Expander between the dye pad and a Proctor and Schwartz Air Dryer to keep spun rayons at maximum width and to eliminate all creases and wrinkles.

The Mount Hope Expander in this instance has replaced a wooden slot-type expander, because, being ball bearing mounted, it is "free-wheeling" and therefore puts less strain on the goods.

Other advantages are as follows:—

Because the warp is subjected to minimum tension, the Neoprene surface of the roll has extra long life.

Expanders can be set at any desired angle to the cloth.

Ball bearings, grease packed, are securely mounted in steel spools to outlast many Neoprene sleeve coverings and so designed that they cannot stick nor turn on the axle and cut it.

This expander is suitable not only for spun rayon but for all fabrics, including rayon marquisette and rayon and cotton tire cord.

We will be glad to assist you, free of charge, with your cloth opening, guiding, or cross-stretch problem.

MOUNT HOPE MACHINERY CO.

42 Adams St., Taunton, Mass.

REPRESENTATIVES—John H. Andresen, Inc., 138 Grand St., Paterson, N. J., Ingalls Engineering Co., 1214 Union Trust Bldg., Providence 3, R. I.; Slaughter Machinery Co., Charlotte 1, N. C.; W. J. Westaway Co., Ltd., Hamilton and Montreal 3, Canada, Sidney Springer, 316 East Commercial St., Los Angeles 12, California.

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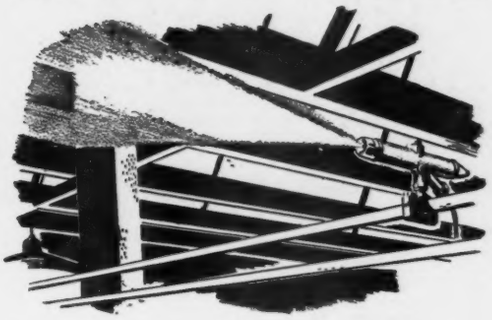
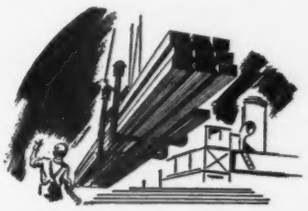
Mist FOR GOOD AND EVIL



Mist, sprayed in process plants requiring high humidity, is vital to the quality of many products. But, it raises havoc with the wood structures. And steam and chemical-laden vapors in wet process plants cause ordinary lumber to go to pieces in a hurry.

Wolmanized Lumber*, wood that's impregnated with Wolman Salts* preservative, is highly resistant to the decay that inevitably develops in these humid atmospheres. Fibre-fixation prevents its washing out or leaching, assures added years of service life.

The Advantages of Building with Wood



Building with wood means ease and speed of erection, light weight, resilience, high insulating value, paintability, low first cost and . . . when Wolmanized . . . long life.

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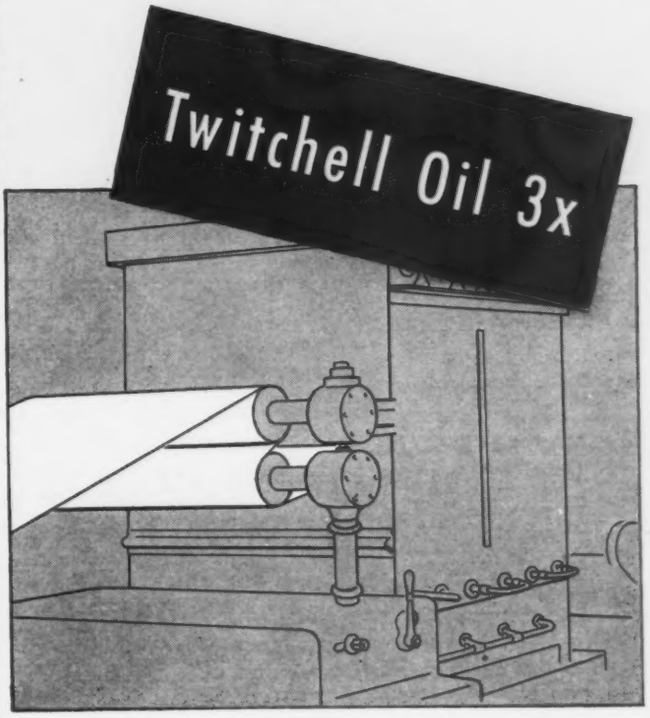

Check these important advantages of Emery's Twitchell Oil 3X in your Sanforizing operations.

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2. Retention of rewetting properties
3. Freedom from oxidation and staining
4. Low volatility—no volatile coupling agents
5. Lubricity imparted to Sanforizing shoes
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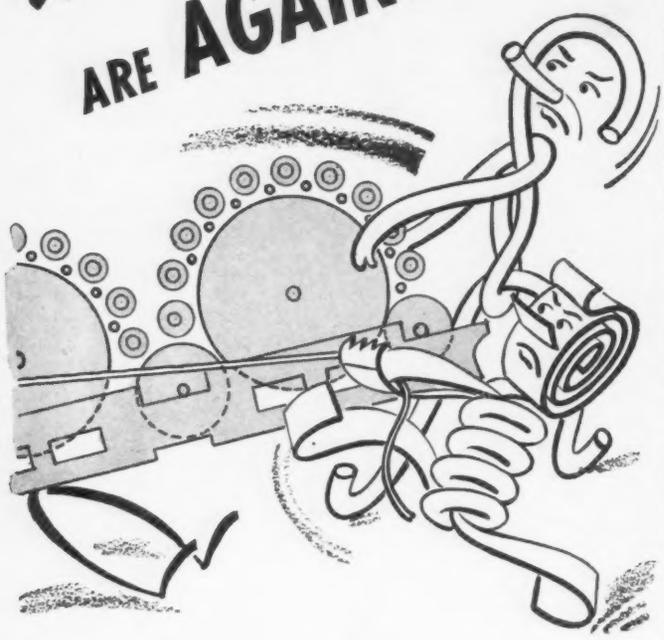
When the cards ARE AGAINST YOU



● You can't beat a card when it comes to genuine unadulterated cussedness.

Feed it stock that is a little off standard—low-grade stock, or a soft-handling merino — and there won't be two rolls that'll be on speaking terms. The web will get cloudy and neppy and keep breaking; the wool will bed; the tumbler will strip off pieces that'll get into the roving—nothing will go right.

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